Amateur Radio

Volume 80
Number 8
August 2012
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WIRELESS INSTITUTE OF AUSTRALIA

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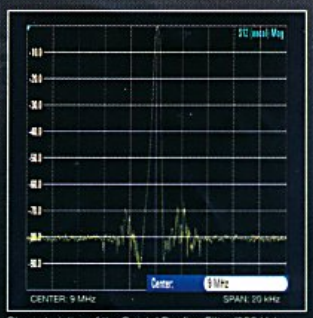
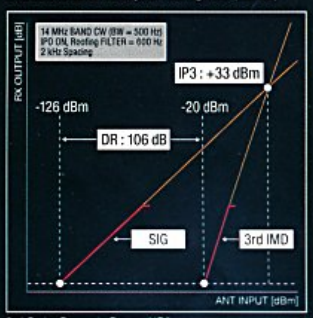


Characteristics of the Crystal Roofing Filter (300 Hz)



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Editorial

Editor
Peter Freeman VK3PF
editor@wia.org.au

Technical Editor
Peter Gibson VK3AZL

Publications committee
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All circulation matters
nationaloffice@wia.org.au

How to submit material
Secretary
AR Publications Committee
PO Box 2042
BAYSWATER VIC 3153
or *armag@wia.org.au*

Letters to Editor
Editor AR Magazine
PO Box 273
Churchill Vic 3842
or *editor@wia.org.au*

Hamads
'Hamads'
PO Box 2042
BAYSWATER VIC 3153
hamads@wia.org.au

Advertising
All enquiries to
Advertising Manager
AR Publications Committee
PO Box 2042
BAYSWATER VIC 3153
or *admanager@wia.org.au*

Registered Office
Unit 20 11-13 Havelock Road
BAYSWATER VIC 3153
Australia
Phone: 03 9729 0400
Fax: 03 9729 7325

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General

This month's cover

This month our cover shows the Bathurst Lighthouse, Rottnest Island, WA. Rottnest Island is a short ferry ride from Fremantle and a popular destination. See the promotional story about the 2013 WIA Annual Conference, to be held in Perth in May next year. It is time to start planning! Photo courtesy of Tourism Western Australia.

Technical

Columns

Contributions to Amateur Radio

Amateur Radio is a forum for WIA members' amateur radio experiments, experiences, opinions and news. Manuscripts with drawings and/or photos are welcome and will be considered for publication. Articles attached to email are especially welcome. The WIA cannot be responsible for loss or damage to any material. Information on house style is available from the Editor.

Back Issues
Back issues are available directly from the WIA National Office (until stocks are exhausted), at $8.00 each (including postage within Australia) to members.

Photostat copies
If back issues are unavailable, photocopies of articles are available to members at $2.50 each (plus an additional $2 for each additional issue in which the article appears).

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The opinions expressed in this publication do not necessarily reflect the official view of the WIA and the WIA cannot be held responsible for incorrect information published.

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A radiocommunication service for the purpose of self-training, intercommunication and technical investigation carried out by amateurs; that is, by duly authorised persons interested in radio technique solely with a personal aim and without pecuniary interest.

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Registered Office of the WIA
Unit 20, 11-13 Havelock Road
Bayswater, Victoria, 3153
Tel: (03) 9729 0400 Fax (03) 9729 7325
email: *nationaloffice@wia.org.au*
http://www.wia.org.au

All mail to
PO Box 2042 BAYSWATER VIC 3153
Business hours: 10am – 4pm weekdays

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Editorial

Peter Freeman VK3PF

Any plans for May 2013?

Yes, it is still a long way off as far as time is concerned, but the 2013 WIA Annual Conference planning is underway. I am sure that we will have more details later in the year as the planning continues. Readers should be aware that the venue has been announced as Perth in Western Australia.

Onno VK6FLAB whets your appetite this month and urges you to consider making plans early. For many, the long trip to the western shores of our continent may be made worthwhile by planning other trips and activities before and/or after the conference. Start thinking now!

GippsTech 2012 a success

The Eastern Zone Amateur Radio Club Inc. has recently held their fifteenth annual amateur radio technical conference at Churchill in Gippsland, Victoria. Over 100 amateurs and several partners attended and all thoroughly enjoyed the weekend. The event is based around the sharing of information concerning weak signal communications, with an emphasis on the VHF, UHF and microwave bands.

The technical program had 18 presentations this year. The topics can be seen at the club website – *www.vk3bez.org* – together with links contained within the various presentations.

The partners travelled around Gippsland in a mini bus, driven by Damian VK3CT and guided by Pauline Corrigan. From what I have heard, they had a ball.

Now that the event is over, all involved in organising the details can relax a little before they start thinking about the 2013 event next July.

A big month ahead

August is a big month in VK. In addition to all the regular activities, we have a number of very popular events.

For many, the International Lighthouse Lightship Weekend (ILLW) sees small groups travelling to a near, or not so near, lighthouse for a weekend of fellowship and radio fun. Many choose to hire accommodation at the light station and set up antennas and radio stations inside the venue, allowing for comfortable operating conditions – an important consideration in the southern parts of the country. It is not a competition, rather a friendly weekend where the aim is to work stations at other lighthouses and lightships. Will you be joining in the fun on 18/19 August? The ILLW web site shows 51 stations planning to be active, so there should be plenty of lighthouses on air locally to work.

On the contest front, we see the Remembrance Day (RD) contest on the weekend of 11/12 August and the ALARA Contest on 25/26 August. Traditionally these are both popular events in VK, perhaps due to the fact that both promote operators to have a more relaxed, friendly approach. The ALARA Rules were published in the July issue of *AR*, with the RD rules published in this issue. Good luck to all participating – don't forget to submit your log!

News

We finally have some news of the new arrangements for Yaesu equipment in Australia and New Zealand. The advertisement on the Inside Front Cover gives details of the authorised dealers and service centres.

Continued on page 5

WIA comment

Michael Owen VK3KI

The band 420 – 430 MHz

Rather than just republish the release on this topic that we placed on the WIA website, I thought it better to make this the subject of the Comment for this issue of *Amateur Radio*. That way I can add a little more information.

Internationally, the 420 – 430 MHz part of the Australian 70 cm amateur band exists by a footnote allocating the band on a secondary basis to amateurs only in the USA, Jamaica, the Philippines and Australia. The 420 – 430 MHz band is allocated throughout the world to fixed and mobile (except aeronautical mobile) as primary, with radiolocation secondary.

I do not know the history of that segment, but that allocation and the footnote were the same 30 years ago.

In fact, use of that segment 420 to 430 MHZ in Australia has been restricted to Advanced licensees and further restricted by various exclusion zones in NSW, the ACT, and the Jervis Bay area, Sydney, Perth and Melbourne. This band segment is mainly used for fixed point to point links for inter-linking of amateur repeaters and an ATV input/output channel.

In April 2008 the WIA reported on the public consultation by the ACMA as part of its review of the band 403 – 520 MHz, which included the amateur 420 – 450 MHz band segment and which could obviously be affected.

Fairly early on, the band segment 430 – 450 MHz was announced to be "out of scope" for the ACMA review, though the ACMA indicated that segment 440-450 MHz may be used on a temporary basis by displaced land mobile services during a transition phase until they are relocated.

In September 2008 the WIA reported on the release of the submissions received by the ACMA as part of its review of the 403 – 520 MHz band and in June 2010 the WIA further reported on the ACMA's announcements.

An examination of the WIA 70 cm Band Plan shows that the segment 420 – 430 MHz is largely "Restricted".

The primary users of the band 420 – 430 MHz are radiolocation and mobile.

Major mobile users are various government networks supporting the police, fire and ambulance services that provide a high social value to the community. In recent years the need for the interoperability and harmonisation of those services has been very obvious, and since 2009 a result supported by the Council of Australian Governments.

It was hardly a great surprise when a few weeks ago the ACMA advised the WIA that the 420 to 430 MHz segment of the 70 cm amateur band will be withdrawn as a secondary allocation, at least for general amateur use, from 1st January 2013.

Unfortunately the withdrawal of the segment 420 – 430 MHz of the 70 cm band does present one problem.

There are a number of repeater link assignments that will need to be moved by 1st January2013. There are some 34 licensees affected, mainly clubs, involving at least 73 separate assignments.

In addition to those 73 amateur repeater links there are a further 33 amateur repeater links in that segment that may be able to operate beyond the 1st January 2013 date and the WIA is currently negotiating with the appropriate parties. When the matter is clarified, the WIA will also be in contact with the relevant licensees.

Until that uncertainty is resolved, we can at least say that after 1 January 2013, the band 420 – 430 MHZ will no longer be available as a secondary allocation for general amateur use.

On a worst case scenario something over 100 assignments may be required to be moved by 1 January next. However, it is expected these can be relocated to the 430 – 450 MHz region.

While the ACMA will be formally writing to the affected licensees, the WIA has undertaken to contact each licensee as soon as it is able to do so, to ascertain whether there are any special difficulties in moving and to ensure that the WIA frequency coordination service is available to assist as required.

Clearly all of this will impose a heavy load on the WIA Repeater and Beacon Coordinator, as the ACMA will not issue amended licences for new allocations without the WIA's prior amateur coordination.

Accordingly the WIA Board has decided to appoint Richard Cerveny VK2AAH as Joint National Repeater and Beacon Coordinator with Peter Mill VK3APO, on the basis that Richard will take primary responsibility for the work associated with the relocation of stations in the 420 – 430 MHz segment.

I hope that by the time this issue of *Amateur Radio* is published, all the licensees affected will have been contacted, and will be planning their action in response.

WIA news

Amateur Licence Fee Increase

The ACMA has increased the annual fee for an amateur licence from $67 to $72 this with effect from 1 July 2012.

The cost of a licence variation (a licence variation applies to an existing amateur upgrading his licence) the variation fee has jumped 20% from $41 to $49.

The current amateur licence renewal options available are as follows:

1 year = $72.00
2 year = $141.00
3 year = $209.00
4 Year = $277.00
5 year = $346.00

High Power Trial – New LTE Exclusion Area in the Perth Area

As part of the on-going discussions with the ACMA, advice has been received that a new Long Term Evolution (LTE) trial commenced in Perth on 1 June 2012 in the 700 MHz spectrum segment.

LTE trials are authorised by the ACMA by way of a Scientific Licence to cover the trial period. The ACMA has advised that no applications from Advanced licensees for variations to their station licences to operate high power within a 40 km radius of Midland, Perth would be approved. Details of the location coordinates can be found on both the WIA and ACMA websites.

Meanwhile, advice has been received from the ACMA confirming that the LTE in the Bendigo region has ended. However, the Scientific Licence that authorises this trial does not expire until sometime in September 2012.

WIA attends ACMA Radcomms 2012 Conference

For the past five years the Australian Communications and Media Authority has held a conference related to activities and emerging issues they confront as the Commonwealth government's spectrum and media regulator. This year's conference was held in Melbourne over 6-7th June. The conference theme this year was *Spectrum beyond broadband* and was opened by the Minister for Broadband, Communications and the Digital Economy, Senator Stephen Conroy via a video link.

As the WIA is a recognised industry participant, the WIA's Government Liaison representative, Peter Young VK3MV, attended on behalf of the WIA. Attendance at events such as this affords to opportunity to speak with other spectrum users, raise awareness of amateur radio and gather information on emerging issues that may affect amateurs.

This year's keynote speaker, Dr. Compton Tucker from the NASA Goddard Space Flight Centre, delivered an interesting presentation on the "Fingerprints of Nature" and how satellites using unique areas of spectrum for passive and active sensing devices to map the earth's climate and change.

Of particular interest to the amateur community, is the ongoing work associated with the Review of 400 MHz spectrum that also includes the 70 cm metre amateur allocation. The review commenced in 1999 was aimed at providing harmonised access to 420-430 MHz for government radio particularly supporting essential and emergency networks supporting police, fire and ambulance.

Presentations were made by ACMA staff on compliance activities undertaken over the past year. In 2011 the ACMA declared mobile phone jammers to be a prohibited device and illegal to possess and to use such devices to interfere with mobile phones operating in the Public Mobile Telephone Service.

The ready access to consumer devices over the internet has seen a dramatic increase in the number of illegal mobile phone jammers coming across Australia's borders. The ACMA working with Customs Australia, postal authorities, and freight importers announced that 300 phone jammers have been seized in the past year. The ACMA said that the public needs to be aware that buying jamming devices overseas and importing them for novelty or commercial use can cause serious disruption to other consumers that need immediate access to emergency services via their mobile phones.

Another device that is causing concern is the importation and use of mobile phone repeaters used to extend phone coverage. These devices are also not authorized and owners could be subject to compliance action for possession and use.

Former ARRL General Manager and IARU President Richard Baldwin W1RU (SK)

Richard "Dick" Baldwin W1RU, of Damariscotta, Maine, passed away on Thursday, June 21, after a long struggle with Parkinson's Disease. He was 92. An ARRL Charter Life Member, Baldwin capped a long career on the ARRL staff with service as General Manager from 1975 until his retirement in 1982. He served as Secretary of the International Amateur Radio Union (IARU) from 1976-1982. After retirement, he continued his involvement as a volunteer, serving as IARU President from 1982-1999 and as ARRL International Affairs Vice President from 1982-1986.

ARRL Chief Executive Officer David Sumner K1ZZ, who succeeded Dick Baldwin as General Manager in 1982, observed that Dick is responsible for much of amateur radio's success in retaining and expanding its international frequency allocations. *"Beginning in 1964, strengthening our position at the International Telecommunication Union in preparation for what ultimately became the 1979 World Administrative Radio Conference, was a major preoccupation in Dick's life. He played a key role in developing and implementing the strategy that led to success. Sitting at Dick's elbow in the years leading up to WARC-79 was an extraordinary learning experience for which I will always be grateful."*

As IARU President, Baldwin led the development and adoption of a new IARU Constitution and oversaw the continued strengthening of the IARU as the spokesman for Amateur Radio at the ITU and in regional telecommunications organizations. In 1999, he was named IARU President Emeritus for his service to the IARU and the Amateur Radio Service.

Editorial

Continued from page 2

News of new models of radios are now filtering out, after announcements made at the large "hamfests" overseas – the Dayton Hamvention in May and Ham Radio Friedrichshafen. Some new models appear to be only mock-ups or prototypes, with the radios not slated for release until later in the year at the earliest.

As someone interested in software defined radios, it was interesting to read the details on-line from Flex Radio of the upcoming Flex 6000 series.

One project which has significant input from Australia is the High Performance Software Defined Radio (HPSDR) project, which has links with TAPR and AMSAT, with Phil VK6APH playing a leading role. The HPSDR team displayed the new Hermes single board SDR transceiver, which has been undergoing extensive beta testing. Hermes looks to be very interesting. One company in India is now advertising for expressions of interest in orders for a very neat case and 10 W amplifier designed to match Hermes. Although the system will have only 10 W output power, the performance of the rest of the transceiver looks to be excellent. TAPR are taking orders for Hermes until July 25, after which it can be ordered from Apache Labs.

Cover photos and Articles

We currently have very few photographs of adequate quality for future magazine covers. Remember to take a camera on your radio activities and to take some photos – you might have a potential cover shot! Remember to set your camera to take the images at the highest possible resolution. In these days of predominantly digital photography, memory is cheap and it is very simple to save the high resolution file to a new name and smaller resolution if you wish to email them to friends. However, you cannot go the other way – from low resolution (small file size) to higher resolution.

Our stock of articles is also much smaller than in recent years. We have only two articles that have been in our review and production system for more than 12 months and they will probably be published in the September issue. We need both Technical and General articles, preferably with some good images.

Goodbye and Thanks

As you will read in this issue, John Bazley VK4OQ has contributed his last ***DX - News and Views*** column. John has been contributing for the last seven years. He has gathered information about the DX scene from a wide range of sources and has as a result kept readers informed and as up to date as is possible with a print publication. Today's DXer will probably be using the various electronic resources that are available, but that does not diminish the importance of the written material presented by John's column of this extended period.

As I prepare this Editorial, we have not identified anyone to fill the hole left by John's retirement. Anyone interested in taking up the reigns can contact either myself or the Publications Committee Secretary Ernie Walls VK3FM.

Many thanks for your long service John. Hopefully you can work a little more DX now that this task is removed from your "to do" list.

Tributes

The Publications Committee has noticed that many tributes (Silent Key notices) received have tended to become major items. Whilst it can be interesting to read of past activities of deceased amateurs, we request that you try to keep these contributions to around 250 to 300 words and perhaps one photograph.

Yes, we do occasionally publish much longer tributes, but usually only for those who have made a very significant contribution to the hobby.

The Secretary of Publications Committee will return any contributions of SK notices which are too long and ask the contributor to précis the item so that it falls within the guidelines. Please do not take offence when this occurs – he is acting under instructions from the Committee. Until next month.

Cheers,
Peter VK3PF

A multipurpose two channel 433 MHz remote control

John Hewson VK3HW

With the rain here early in the year the dam went from a puddle to a lake and I was prompted to build a single channel, remote controlled model boat. The simplicity of the design then went to a two channel design for a model yacht, and the concept then led me to use it for my fox hunt antenna. It can also be used for camera control, up down, right left and other applications.

The idea developed from the use of a servo module used in model aircraft, boats and the like, readily available from model shops and the net prices for a base unit around $10-20. The most interesting bit is the chip, on the PCB inside the easily dismantled unit, but I have found the drive transistors from these servo units vary, so my suggestion is to simply use the polarity sent to the motor to drive a simple relay pair to allow a 12 V motor drive from the 5 V control circuit.

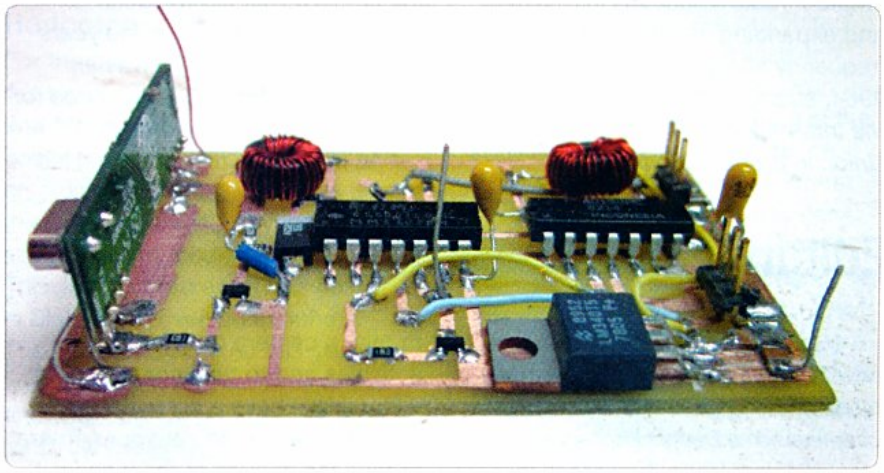
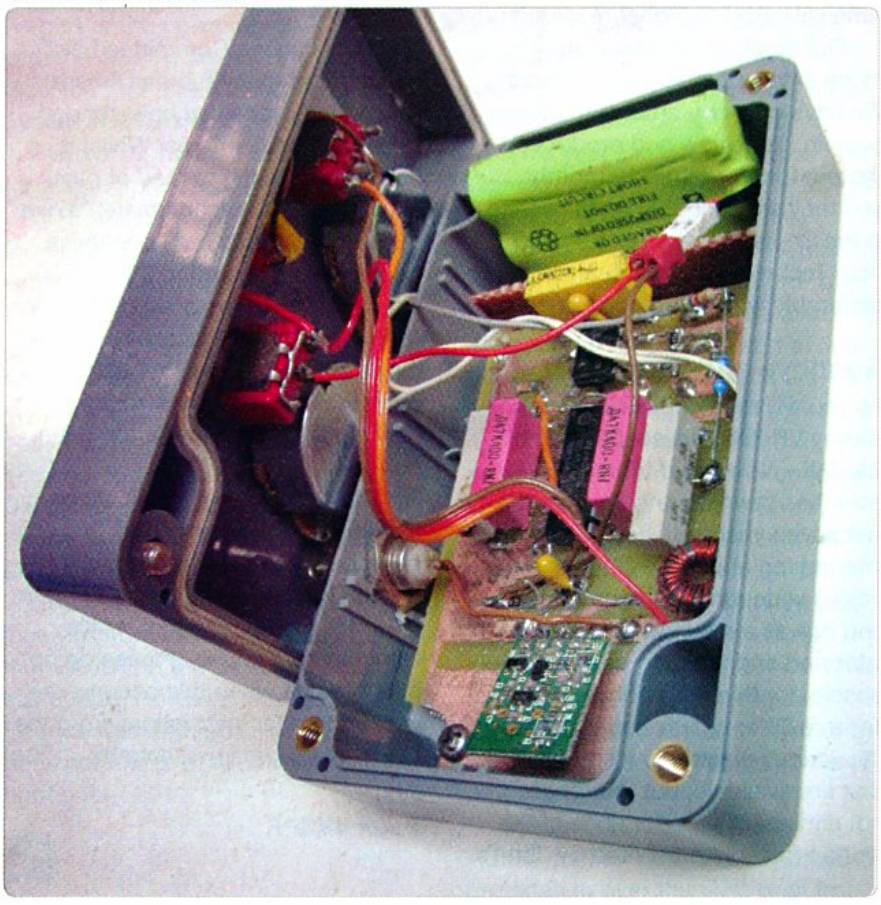


Photo 1: The receiver.

Photo 2: The transmitter.



I have used more powerful drive transistors for the motor in my model yacht winch, but for this article I will keep it simple.

PCM servos work on a 20 ms pulse modulated from 1 to 2 ms and a centre position of 1.5 ms. Usually this is transmitted in a chain of around seven pulses plus a sync pulse, received and decoded and distributed to around say seven servo units. For a simple two channel unit, I have found the update time better at 10 m/s so the clock runs at 100 Hz and no sync pulse is required. (Refer to reference 1)

The 555 generates a 100 Hz square wave with a form factor of 1:1; the positive going pulse will drive one half of the 4528 monostable, and the negative going pulse will drive the other half - these will produce the 1 to 2 ms signals for the position control, adjusted by VR1 and VR2. A reset on the 555 helps to set which is which on the controller, if required. The two pulses are then combined by diodes and fed to the 433 (Jaycar ZW-3100) transmitter module, transmitting at 200 Hz. I have found SMD more convenient for prototype build and the PCB will fit into a Jaycar waterproof box with a 4.8 V phone battery.

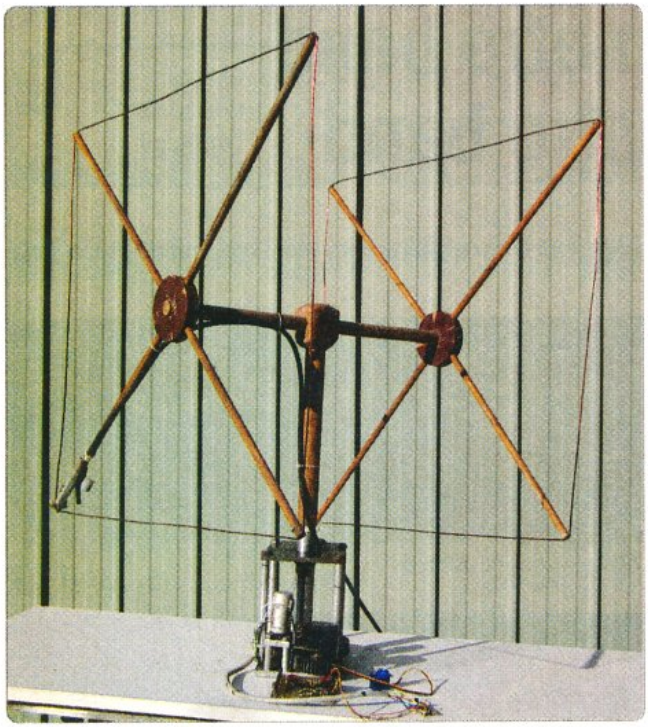


Photo 3: The antenna.

The received signal is buffered by a transistor, and A and B provide a setup time delay, this then is fed to the 4013 clock pin to divide by two to provide Q and Qbar signals. This clock signal is inverted by a transistor and with the remaining NOR gates C and D provide the 5 V pulses to the servo units.

The servo units are noisy, best to use a 5 V regulator for them and a 5 V regulator to the receiver.

The output of the servo normally drives a tiny 4.8 V motor and are not very efficient, and I have found around 100 mA motor drive current so one can drive larger 5 V motors directly from the PCB, but for larger applications, say 12 V windscreen motors, it is suggested to remove the servo motor, use the polarity of the servo drive to drive two transistors to energise two relays; also required is a feedback pot, best supplied from a 3.3 V regulator.

For single channel use, simply use just one half of the 4528, feed to the transmit module and the received signal should be enough to drive the servo; add a time delay if required.

If you want to build up this controller, I do have five new servo units that I do not need, at $5 each plus post. I am QTHR or email me at *vk3hw@wia.org.au*

The two metre quad antenna fits in the roof of the car. It was cable driven, five wires and coax. Now the DC supply is fed up the coax and direction can be seen on the remote control in the car.

Reference 1: *ARRL Handbook 1992,* ch 21-2.

How to tune your 20 metre band antennas to the 12 metre band

Rainer Gruening WG2L – ex DL2PC
e *reks4g@verizon.net*

It is widely known that a 2 x 20 m double-Zepp antenna can successfully be tuned to the 30 m and 17 m band without additional tuning equipment, match box etc. using just, for example, a Kenwood TS-830S, and that resonance may be achievable with reasonable SWR ratio. Numerous DX QSOs confirmed this again during the recent gradual band openings. How to tune a 20 m ground plane or even a two element beam for 20, 15 and 10 m for the 12 m band with good resonance operation is perhaps not well known. The following are simple tips on how to do it from the shack level without changing the installed antennas.

After the last ice storm when spring finally arrived, I was able to reinstall the broken coax-cable of the 20 m ground plane. After all was hooked up corrosion-free again, I checked the antenna with the panorama position of my Winradio G303 and a noise bridge as a precautionary measure and found the corresponding resonance point in the 20 m band as was expected – refer Figure 1. The frequency scale is given in MHz on the horizontal axis. The vertical axis shows dB in the 10 dB grid. The peaks pointing upwards result from shortwave radio stations, since the broadcasting bands were open during the time of measurement.

While routinely using a homemade L-match box to improve the SWR and tuning the ground plane on 14.1 MHz, the scan suddenly showed an unexpected additional resonance at about 25.7 MHz – refer Figure 2, obviously a 5/8 λ harmonic resonance. The original SWR without the match box turned out to be 1:3.

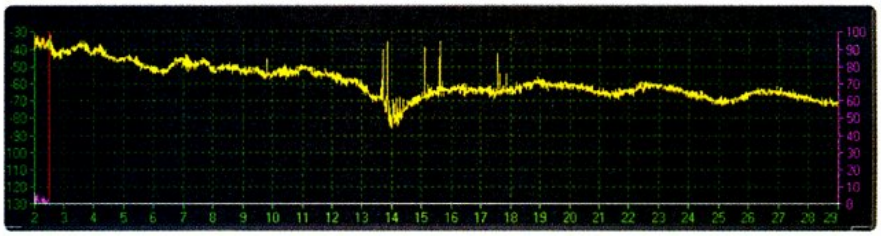


Figure 1: 20 m ground plane without L-Match.

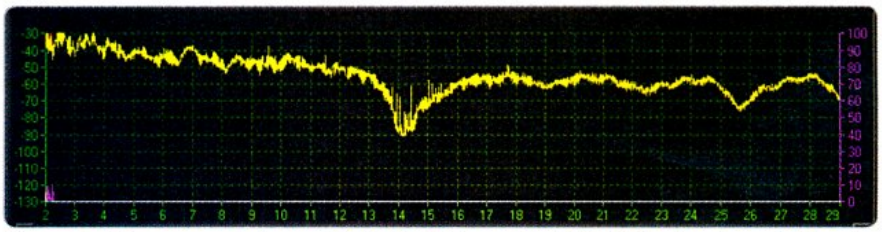


Figure 2: 20 m ground plane with L-Match tuned to 14.1 MHz showing additional resonance at 25.7 MHz.

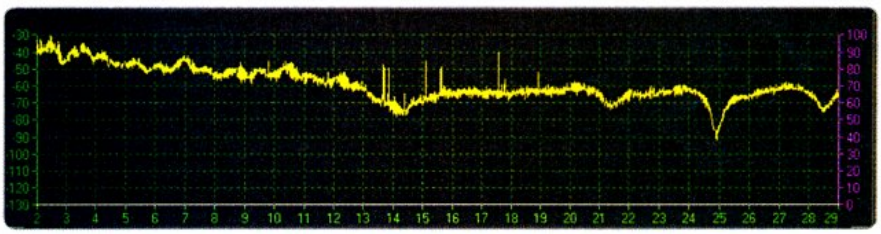


Figure 3: 20 m ground plane with L-Match tuned to 12 m band.

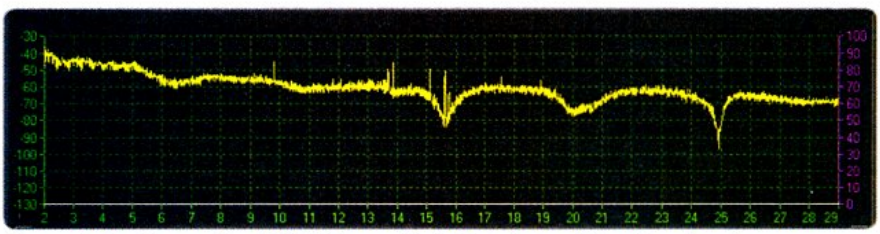


Figure 4: 2-el beam for 20/15/10 m with L-Match tuned to 12 m band.

As can be seen after L-match tuning of the antennas in Figures 2, 3 and 4, two important aspects stick out. First, the resonance quality factor of the antenna as an open electromagnetic circuit increases using the L-match. Without the L-match, the resonance absorption peak for the ground plane is about 20 dB at its intended frequency. With the L-match, however, the Q-factor is over 30 dB. The second point is the clear identification of an additional antenna resonance.

Immediately I tried to see if the second antenna resonance identified at 25.7 MHz could be pulled down into the 12 m band

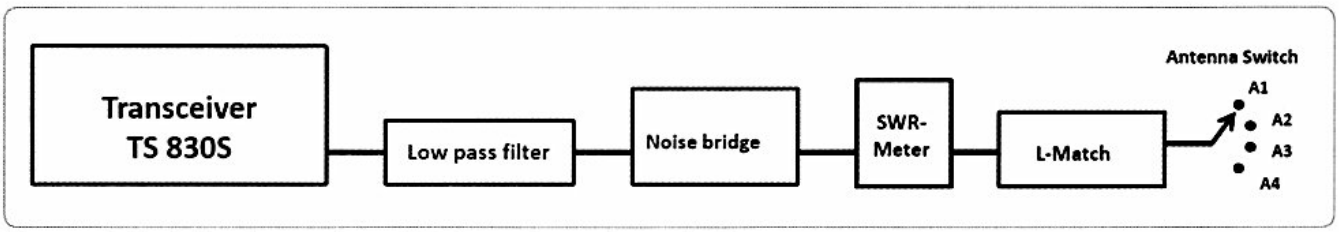


Diagram 1: Control and measuring units between transceiver and antenna.

with the L-match and achieve reasonable SWR. Figure 3 shows that not only is it possible, but that I even obtained a sharp resonance point with an absorption depth of about 25 dB.

The following successful QSOs on 24.96 MHz in SSB across the Atlantic then confirmed the functioning of the 20 m ground plane on the 12 m band. This tuning system I applied with great hope to the available 2-el triband Fritzelbeam. Figure 4 shows a sharp resonance point for the tuned frequency in the 12 m band with over 30 dB. Obviously, the beam can also be tuned to the 12 m band.

All the following SSB DX QSOs across the Atlantic with this antenna confirmed again that a beam can be tuned effectively to this band. Certainly, one should not claim to have a 2-el beam for 12 m. It might need further investigation. The block diagram shows how to hook up control and diagnosis units with the match box and coaxial switch as well as the corresponding antennas for resonance tuning and impedance transformation. Note, that the noise bridge for inline operation must have a by-pass switch; otherwise the HF will destroy the bridge. It was designed with a preset of 50 Ω to accommodate the output impedance of the transceiver.

With an actual 100 watts, the 20 m ground plane as well as the 2-el triband beam for 20, 15 and 10 m can be tuned across the entire 12 m band according to this tuning principle, without physical modification of the antenna. On this contest-free band one can most likely in this way enjoy nice additional QSOs with already installed 20 m antennas. A simple 20 m dipole should also be suitable for tuning in on the 12 m band with the L-match. During the routine tuning process, certainly the RX-S-meter can be used to find the minimum from the noise bridge when tuning with the L-match. Should you still find a soldering iron in your shack, then a simple L-match box according to the diagram can be easily and cheaply homebrewed from surplus parts. In the diagram, the switch is drawn for the antenna connector in the low ohm position, <50 Ω, for example, ground plane. Turning the switch to the right, selects the high ohm option, >50 Ω antennas.

The variable coil does not need to be larger than four to five µH but must be dimensioned to handle 100 watts. A one mm wire diameter is sufficient. As a compromise, a 2 x 12 independently tapped coil with ceramic rotary switches will do. The variable capacitor with ceramic insulation from former ham gear can be bought from flea markets for a reasonable price. In case a noise bridge is not at hand, I recommend investing in one. The handy amateur will find plenty of suggestions on the internet for how to homebrew a noise bridge. However, if you cannot wait to get a noise bridge, you might be able to manage the tuning using the match box without the noise bridge. Just tune the box on maximum noise in the 12 m band, then fine tune with low power for best SWR, and finally tune with higher power once more and trim for optimum SWR. If you want to run a 500 watt final amp with it, you must have a coil of about 2 mm silver plated wire and a variable capacitor with plate distance of around one mm. Enjoy the soldering project and good DX in the 24th sunspot cycle.

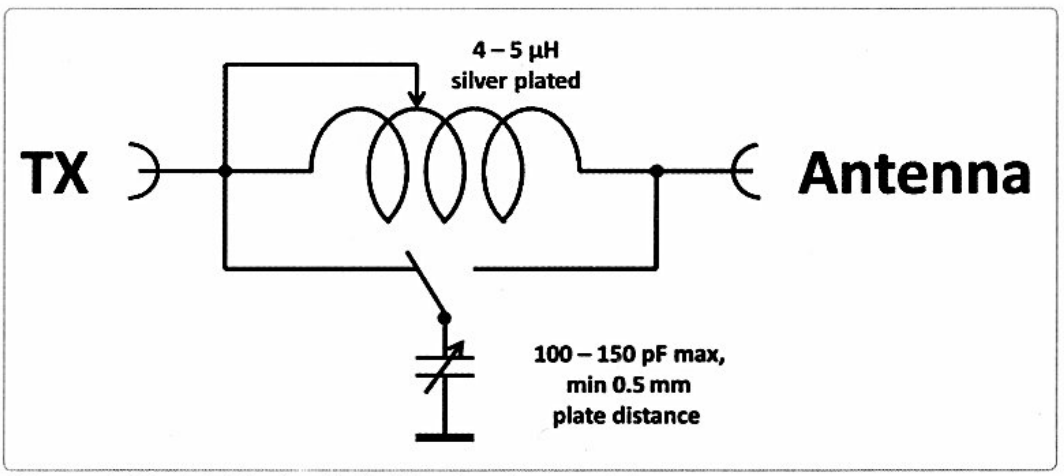


Diagram 2: Simple L-Match with high/low impedance switch.

The 'Match 22' – a micro antenna coupler for portable use

Peter Parker VK3YE

Possibly the lightest wire antenna for portable use is an end-fed half wavelength of wire. Performance is similar to a dipole, there is no heavy feedline and several bands can be covered. And only a short counterpoise is required for efficient operation due to the antenna's high impedance on most bands.

Because I am often at the beach with no natural antenna support, a favourite mast is a nine metre squid pole. An exact half wavelength of 20 metres is slightly too short to open up the apex to a satisfactory angle. For that reason I use a little more, approximately 22 metres. It is this length that gives this unit its name, since it can match a 22 metre wire on all HF bands between 40 and 10 metres.

The usual portable antenna coupler contains a variable capacitor and rotary switch housed in a metal box. The coil may be air or toroidal wound. Rotary switches take up valuable space and the cheap plastic types are unreliable. Protruding knobs, sockets and patch leads often foil attempts to make the station smaller.

The 'Match 22' is the author's attempt to build a small L-match antenna coupler for portable use. It is particularly suitable for QRP transceivers like the FT-817, so would make an excellent Foundation licensee project.

All parts are mounted on circuit board material on the back of an RCA plug. Instead of wasting weight on a metal case, a crush-proof food storage case houses the unit. While pocket sized, there is still ample room for accessories such as field strength meters, earphones, coax adapters and counterpoise wires inside the case.

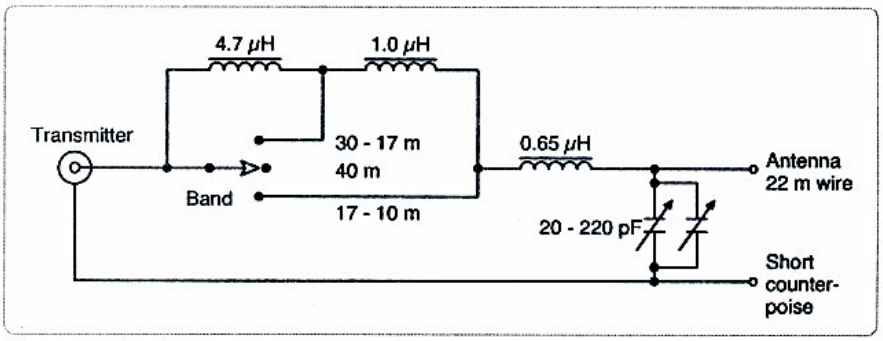


Figure 1: Circuit diagram of the end fed L-match 'Match 22'.

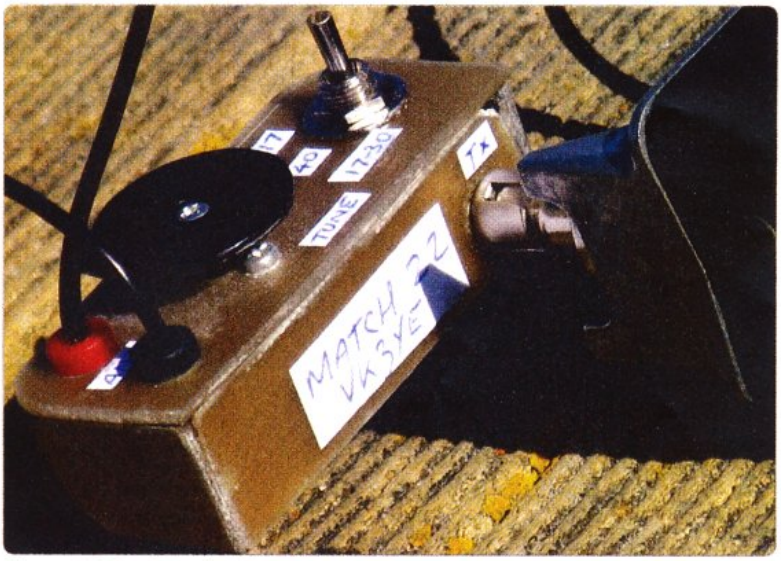


Photo 1: The 'Match 22'.

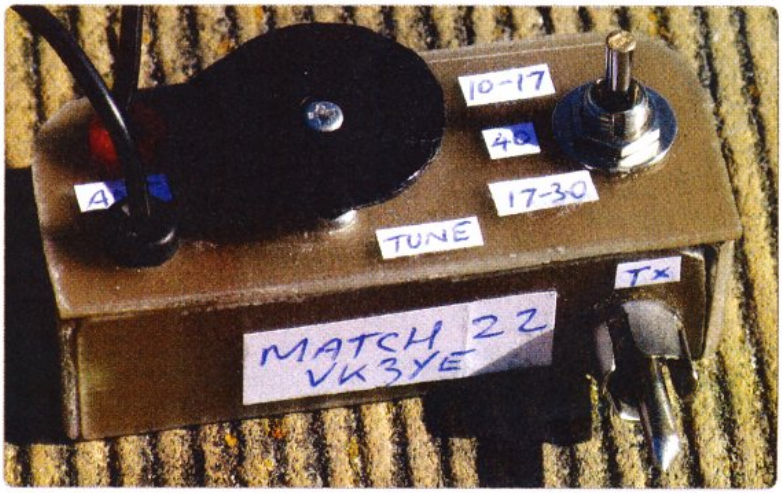


Photo 2: The completed 'Match 22'.

With small size there are, naturally, compromises. The plastic tuning capacitor and RF choke coils have limited power handling capacity but no problems have occurred with five watts.

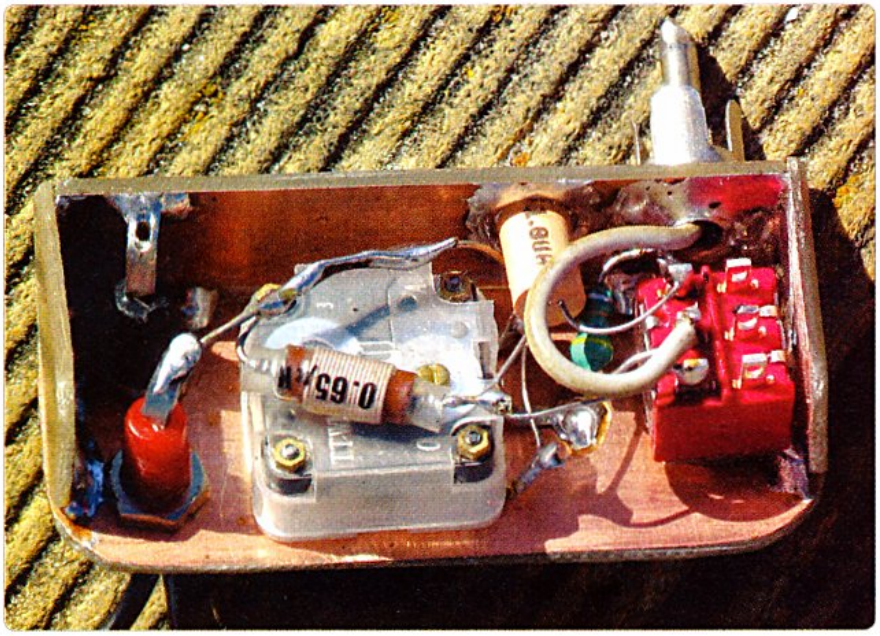
Without a rotary switch there is a smaller inductance range. The unit will not cover 80 or 160 metres, for example. Instead there is a toggle switch with a centre off position. The coils are wired in series with the switch shorting out none, one or two of them, depending on the range selected.

Parts should be generally available, with the variable capacitor and two of the three RF chokes stocked by Jaycar. The 0.68 uH choke is not a stock item. If left out the unit will still work but will not tune higher bands like 15, 12 and 10 metres. Experiment with making your own, from enamelled copper wire, if these bands are important.

Construction should be fairly self-explanatory from the circuit diagram and photos. Keep leads short to minimise stray inductance. Wiring the switch is most fiddly, if you get it wrong you may not be able to cover all bands. The centre connection of the 60/160 pF variable capacitor is grounded, soldered to the circuit board chassis, while the two outer terminals are wired in parallel to increase the maximum capacitance available.

Five watts to an end-fed wire will not bust too many pile-ups. Nevertheless it can produce surprising results, such as to the VK6 on 20 metres who quipped I had a 6 element Yagi on the beach. With reasonable conditions DX is also quite workable.

Photo 3: The internals of the 'Match 22'.



ALARA International Meet – The trip from Adelaide to Darwin

Margaret Blight VK3FMAB

On the Tuesday following the ALARA International Meet in Adelaide, 26 of the participants were collected from their accommodation and taken to Adelaide Airport to fly to Alice Springs. This tour was an option organised by Tina VK5TMC for those who wanted to see more of Australia. Most of the travellers were from overseas but there were five or six Aussies as well. In the original plans for this tour we were to have travelled from Adelaide to Darwin on the Ghan train. Unfortunately this was not to be, as previous travel arrangements were unavailable at the last minute. A hasty rescheduling meant there would be an extra day and night spent in Alice Springs. An additional tour was booked and this turned out to be one of the highlights of the whole trip.

After arriving at Alice Springs and checking in, they were taken by bus from their hotel to a disused quarry on the other side of the McDonnell Ranges where the lights of Alice Springs were almost invisible. Here they were given a demonstration of the use of different shaped boomerangs by a very knowledgeable young man.

They were then shown how the make a real damper from plain flour, salt and water. The end result was absolutely delicious served with butter and honey. They were then given a serenade, and there was plenty of audience participation in providing an accompaniment with a variety of bush instruments. After a delicious meal of steak and salad, the evening ended with all the lights out and then they were given a talk about the brilliant stars which stretched out above us.

Photo 1: At the old telegraph station – some of the equipment.

On Thursday all travelled west from the Alice beside the McDonnell Ranges. The group stopped at the memorial to John Flynn, the founder of the Flying Doctor Service, visited Stanley Chasm, the Ormiston Gorge and Simpson's Gap, at each of which everyone had a chance to walk in the bush and to see the red earth of the Centre. Every guide they had in this part of the tour emphasised that they were seeing an unusual Red Centre. Like Adelaide itself, the Centre has had two years of exceptional rains, so the growth everywhere was much more lush than normal at this time of the year. The group finished the day at the Desert Wild Life Park.

Next morning they were taken on a tour of the Alice itself, starting at Anzac Hill so they could see the whole town spread out below us. Then a visit to the School of the Air where there was a film shown of the way the School operates now and how it used to operate.

At the Flying Doctor Centre they heard about Alf Traeger and his invention of the pedal radio and the enormous difference this made to the people living in the outback. The Mantle of Safety was immediately obvious. They also visited the Old Telegraph Station, part of which is still set up as it was when it was functioning. It was interesting to hear that the need for the telegraph station disappeared with the advent of radio teletype etc.

Next morning the group set off for Uluru (Ayers Rock). After leaving cases and other effects at the motel where they would be for the next couple of nights they travelled on to Kata Tjuta (The Olgas) where there was an opportunity to walk through the Valley of the Winds.

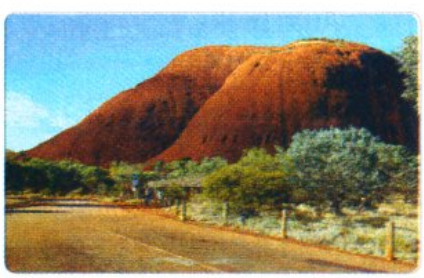


Photo 2: Approaching the Valley of the Winds.

Photo 3: The group enjoying sunset at Uluru.

In the late afternoon they travelled back to see the sun set over Uluru accompanied by champagne and nibbles, of course.

The following day everyone was up at 5.30 am to be taken to the Sunrise strip at Uluru. After breakfast back at the hotel, they were taken on a base tour of the Rock. The bus guide told the stories of the different sections of this incredible place. Everyone was allowed to walk in to Mutitjulu Waterhole, which used to be called Maggie Springs.

Again, because of the unusual rains over the past two years, there was a lot of water here. Later there was a visit to a cultural centre so all could hear more about Aboriginal lore and buy some locally made items; then to Kings Canyon Resort for our overnight stay.

Back on the Ghan for the last part of our trip to Darwin, most of us were in the same carriage and were allotted the first sitting for dinner. The meal was great and the service was all one could ask, and so eventually to bed. When all met in the morning the talk was mostly about how well or badly everyone had slept, as the Ghan rattled its way through the night. Most did not try the shower. It was very squeezy. Tony WA1ENO did brave it and said the water was hot and strong. Once he had worked out how to turn around in the space.

The closer the train got to Darwin the more fires we saw. Once the wet season has finished the undergrowth is burned off. This has two benefits, it allows the growth of some plants that need to be overheated to germinate in the soil and it controls the amount of material there is in the event of a bushfire started by lightning.

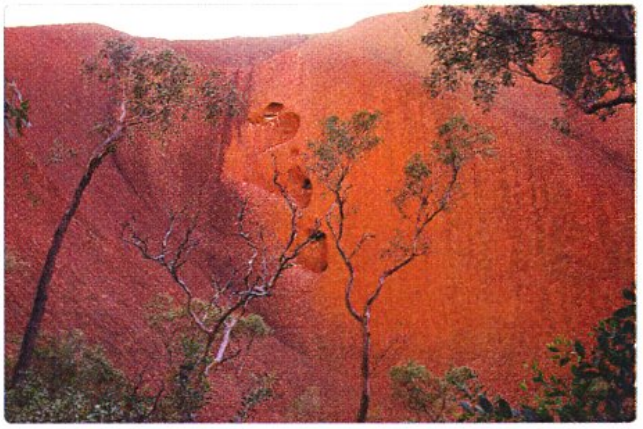


Photo 4: Mutitjulu Waterhole.

As they approached Katherine everyone went to the buffet car to book the tour they intended to take. There is a four hour halt in Katherine to allow passengers to visit the town or to take a boat on the beautiful Katherine Gorge. On the boat the guides had many stories to tell about particular formations. When one left the first boat to get into a second one in the next gorge they were shown some Aboriginal wall paintings and told more stories. At this time of the year, at the start of the dry season, no one was allowed to swim or canoe in the river. There were several crocodile traps set to catch any animals that had managed to get into the river during the wet season.

Finally, arrival at Darwin an hour late and the bus was allowed to drive right alongside the train carriage to load luggage. The bus then took everyone to the hotel where all found the staff a little flustered to have 26 people arrive on Tuesday, when they somehow expected the group on Wednesday. However, they coped very well.

Spud VK8ZWM and several other members of the Darwin Amateur Radio Club had come to the hotel to greet us, which was great. As it happened Chae HL1KD from Korea recognised one of the OMs. She had met him at a SEANET Conference a few years ago. Again everyone marvelled that it was a small world, especially among radio amateurs.

The group had a free morning on the Wednesday and in the afternoon they were taken for a tour of Darwin. After a stop at the Botanical Gardens where there were many new species of birds to see, they were taken to the museum where, among other interesting exhibits, most watched a film about Cyclone Tracy.

There was a final Gala Dinner that night. However, it started with a visit to the Darwin Radio Club (DARC) rooms were they had prepared a proper Aussie barbecue as a last memory of Australia for the overseas visitors. As it happened, that day was Norway's Independence Day, the day when they celebrate their final separation from Denmark. Unni LA6RHA had brought along champagne for everyone to toast her home country, and she presented the DARC with a banner to hang on their wall.

A fitting end to a great two weeks. Everyone then prepared for a final return to their various homes on the morrow.

Margaret Blight VK3FMAB compiled this report from information provided by Christine Taylor VK5CTY.

WIA Contest Website

To keep up to date with all of the major Australian contests, including rules and results, at the WIA Contest Website at:

www.wia.org.au/members/contests/about

The Blob Board 500 mW CW transmitter

Nic Chantler VK3COW and Alan Simpson VK4AAE

Hey mate... do you want to learn by doing... and earn some fair dinkum bragging rights? Then, have we got a great project for you! It's simple... it's great... and just right for Foundation licensees, Old Timers and radio clubs as well! *(Whilst it may be suitable for Foundation licensees to build, their licence conditions do not permit them to operate this transmitter. Ed.)*

It's as simple as shelling peas... it's as cheap as they come...and it works like a beauty! It is... *'The Blob Board 500mW CW transmitter'.*

Ed Knoll W3FQJ first designed and Tom Jurgens KY8I later developed the 'Michigan Mighty Mite' circuit, which we have used as the basis for the 'Blob Board 500 mW CW transmitter'... it was 'whacked together' and completed on a Sunday afternoon! Just read the article fully, follow the diagrams and the pictures and... WHAM! BAM, a few hours later you too could be 'On Air' with a very respectable QRP signal!

You will remember that quadrupling, or quartering, your RF output, will add, or reduce, the received signal by only one 'S' point. So, for example, if an 64 watt transmitted signal is being received at 'S9' then 16 watts output will produce a 'S8' signal, a eight watt output an 'S7' signal, two watt output an 'S6' signal... and a 500 mW output... a surprising 'S5' signal.

Blob Board construction

1. You need a clean piece of single-sided, printed circuit board 36 mm x 48 mm, some suitable screws, a few small pieces of wood, a hacksaw with the blade strongly tensioned, a power drill, a pair of side-cutters, a screwdriver, some solder and a soldering iron.

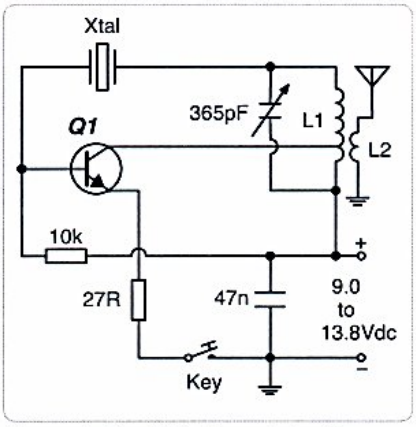


Figure 1: The Blob Board circuit.

2. With a fine-point marking pen and a ruler, divide the short side of the PC board into three equal parts and the long side into four equal parts. At those marks, draw a grid of parallel lines on the copper foil to produce twelve equal sized squares on your PC board.

3. Spend a few moments making a small wooden jig so the hacksaw-cuts along the lines are controllable and neat. Clamp your PC board in the little jig, together with a small 'waste' piece of PC board on either side, and using a fine toothed (32) hacksaw (with the blade strongly tensioned), carefully cut along all the scribed lines to remove the thin layer of copper foil. Inspect the cut after each stroke and modify the next stroke if needed. Do not be heavy-handed and stop when the copper foil has been removed along the line. There are three separate boards in Photo 1. One board is marked out ready for cutting, one is clamped and being cut and one is finished ready for mounting components.

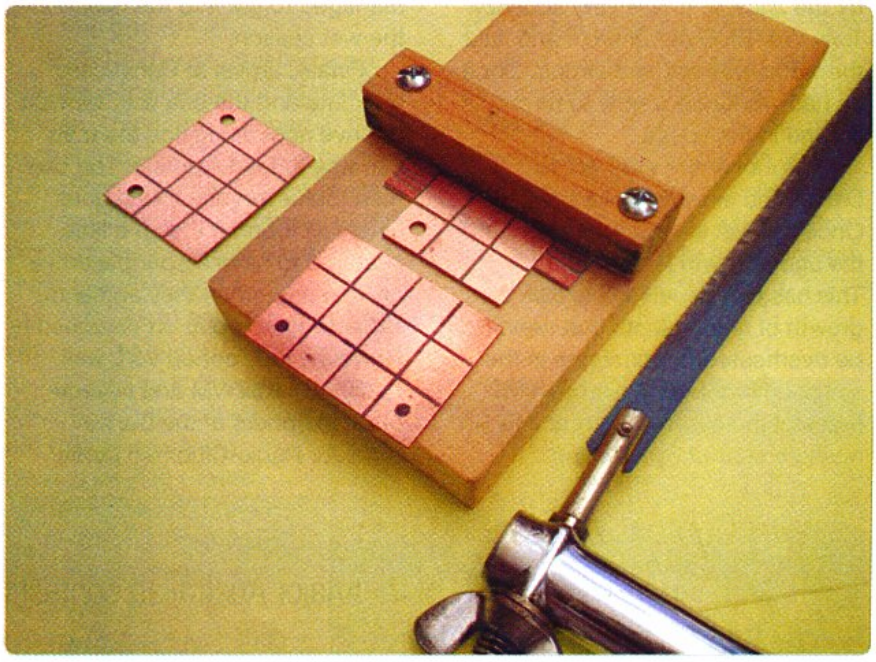


Photo 1: The 'Blob Board' early in the construction stage, showing the three separate PC boards described in the text.

5. Drill holes for two fixing screws in two of the unused copper squares.
6. Clean the copper surface and any ragged edges with a piece of fine steel wool in preparation for soldering. Check for and remove any steel wool 'left-overs'.

Refer to Photo 1 to check your progress on each of the above six steps.

Component details

7. Nic has tested the rig with the following NPN transistors - BFY50, BFY51, 2N3053, 2N3055, 2N2222 and SK2365. Do not forget to use a heat-sink though - in an emergency, a crocodile clip works well. Locating a small variable capacitor, approximately 365 pF, may require a little effort if you do not have a good junk box, but like the coil, it is mounted separately from the 'Blob Board'. Miniature tuning capacitors generally are unsuitable. If the variable capacitor does not tune the circuit to resonance, you can put a fixed capacitor in parallel with the variable capacitor to increase the total capacitance, or in series to lower it. Refer Photo 2.

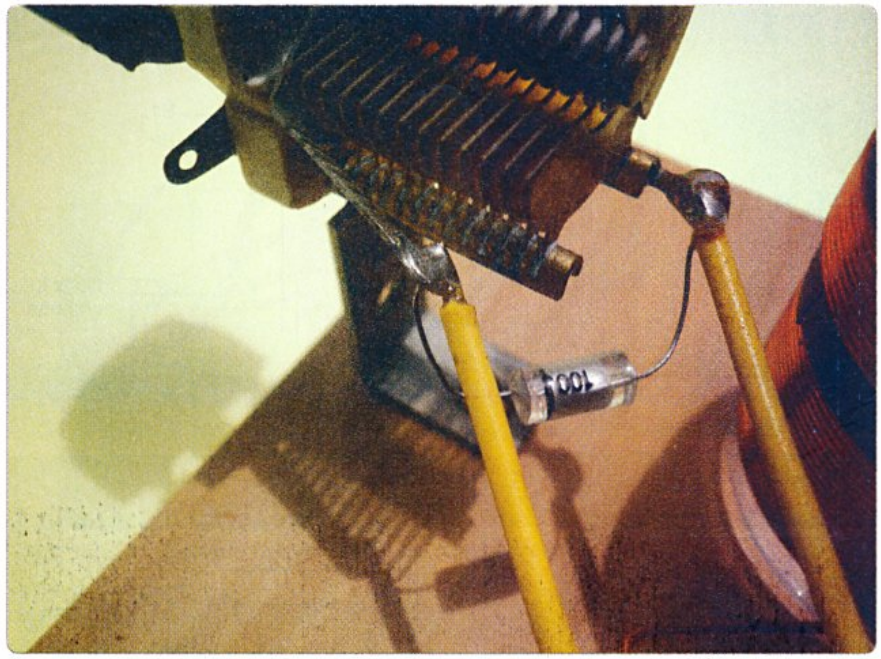


Photo 2: The variable capacitor showing the fixed capacitor mounted in parallel with the variable capacitor to increase total capacitance.

8. Generally, QRP clubs use crystal frequencies of 1.815, 3.530, 7.028, 10.106, 14.060, 21.060, and 28.060 MHz. If you have others which are similar, use them but if in doubt please refer to the WIA Band Plan for CW operation. Nic and I used FT-243 crystals and holders. Refer Photo 3.

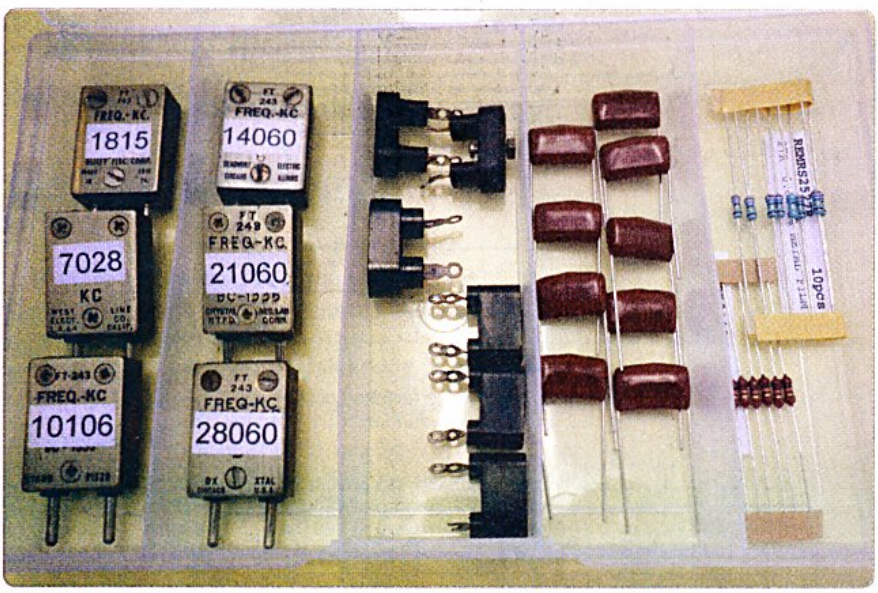


Photo 3: The various components; note the commonly used QRP crystal frequencies used.

9. I used metal film resistors, 1% 27 ohm and 10% 10 k ohm as I already had them but others of close value will work. Nic, for example, used a 33 ohm resistor instead of the 27 ohm resistor. Incidentally, we both used the 0.047 µF capacitor as it is the closest preferred value to the much older 0.050 µF, which may be hard to obtain.

Construction

10. Cut a small piece of wood the same size as your 'Blob Board' to elevate it above a wooden base of your choice. Using two long screws in the holes in your 'Blob Board' mount and hold your 'Blob Board' and wooden spacer firmly in place.
11. Study Nic's schematic circuit in Figure 2 (next page) and use it to locate and solder all the 'Blob Board' components first, and then finish by soldering the coil, coax, power and Morse key connections last. Start by soldering the crystal holder near the edge of the 'Blob Board' to make room for the transistor and its heat sink. Some heat-sinks totally enclose the transistor

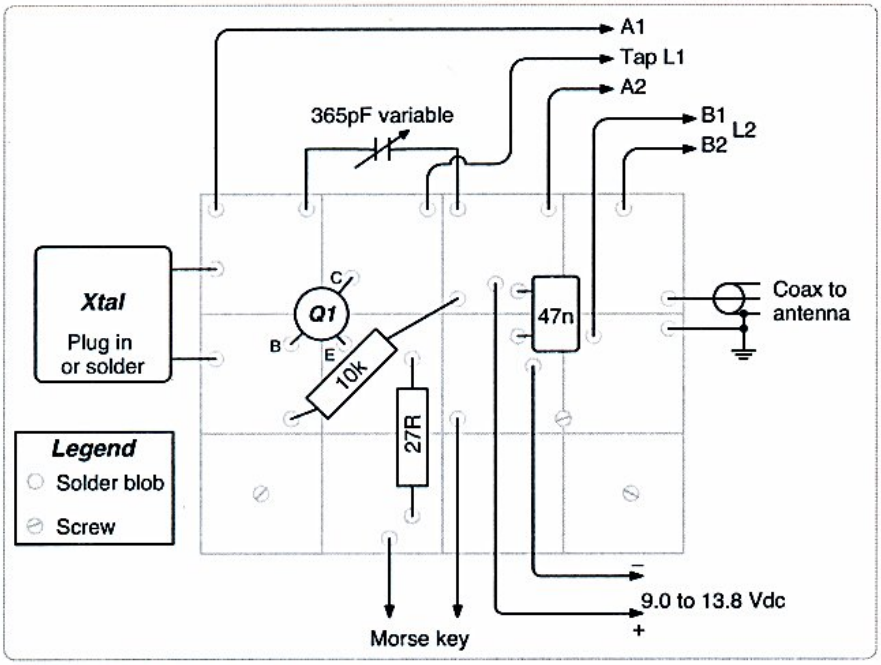


Figure 2: The 'Blob Board' layout.

so be careful to identify the collector, emitter and base before attaching the heat-sink. That done, bend the tips of the transistor legs and adjust them so that each leg sits nicely at the corners of three copper squares before soldering them in place.

12. After positioning your two resistors and capacitor on the 'Blob Board' neatly bend the pig-tails and solder them in place. Similarly, holding your coil in position beside your 'Blob Board', identify the coil connections, cut each wire to length, scrape the enamel off the ends, re-position the coil and solder each wire to the correct 'Blob Board' square. After completing all connections, carefully and methodically check all your connections against Figure 2.

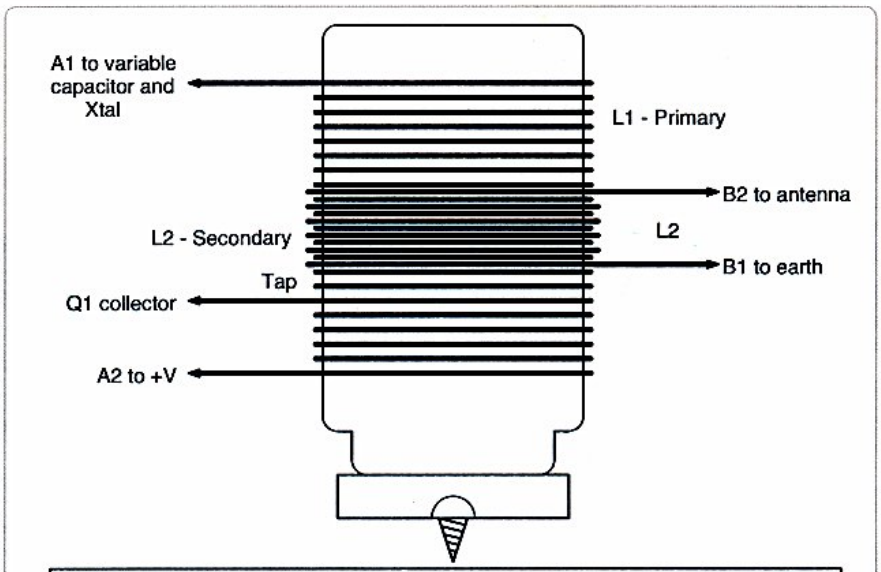
Coil Winding Construction

13. Before choosing the band you are going to operate on make sure you are licenced for that band and then refer to the details in Nic's schematic for your coil winding details. See Figure 3.

14. Nic's coils for 160 and 80 metres are slightly different to mine but they all worked well. You can, as Nic did, use an inverted, plastic vitamin container with a push-on lid as your coil former. He fixed the lid to the mounting board with a screw, wound L1 and L2 on the container and then pushed the container on to the lid. The dimensions of his coil former were approximately 9 cm long x 4 cm diameter but similar dimensions also seem to work. We both used 20 swg enamelled wire and have also used 21 and 22 swg.

16. If you use a different diameter coil former, you may want to work with the lengths of wire shown in Figure 3 rather than with the number of turns. It worked for us! Do not forget to add extra lengths on each end for connecting to the 'Blob Board'.

17. To tap L1 at the right place, make a small loop 25-30 mm in the wire, scrape off the enamel insulation, twist tightly together, and then finish winding L1. Wind some electrical tape around the middle of L1 before winding L2 on L1 and remember that L2 is wound in the same direction



160 m to 30 m coil details

All coils 20 swg enamelled copper wire
L2 (secondary) wound over L1 (primary)

L1	Length	L2	Length
160 m - 60 turns, tap at 20 turns	755 cm, tap at 251.5 cm	8 turns	101 cm
80 m - 45 turns, tap at 15 turns	566 cm, tap at 188.5 cm	6 turns	76 cm
40 m - 21 turns, tap at 7 turns	264 cm, tap at 88.0 cm	4 turns	51 cm
30 m - 15 turns, tap at 6 turns	189 cm, tap at 75.5 cm	4 turns	51 cm

Figure 3: The 80 metre coil details.

as L1. See Photo 4. I used Super Glue to hold the first and the last turn in place on L2, leaving extra lengths for connection to the 'Blob Board'. Normally, the antenna coupling coil L2 should be positioned towards the 'hot end' (+ve) of L1, but we both found that it did not seem to make much difference in this case. To experiment with an adjustable L2 refer to Photo 5.

Testing and Operation

18. It is very important to ensure you have a good earth connection. Likewise, it is highly recommended that you use a resonant, half-wave dipole at your crystal frequency with the feed-point approximately a half wavelength above ground. As it is very important to minimise losses when using low-power transmitters, do not use an antenna tuner and avoid using old or lossy coax. RG-8X coax is superior to RG-58 and if possible do use an antenna analyser when adjusting your antenna system. Plug in your crystal, apply 12 volts DC, close the Morse key and check the output with a simple field strength meter or with an HF receiver which has adjustable front-end attenuation. The usual procedure is to tune the variable capacitor of your 'Blob Board' transmitter to produce the cleanest signal with the greatest power output and you only need to switch the antenna between the transmitter and the receiver. So, *by next Sunday night...* see Photo 6.

If you need additional Information

19. On crystals go to: http://www.users.on.net/~zietz/qrp/webxtals/catalogue.htm
or: http://www.s88932719.onlinehome.us/crystals.htm
On a simple field strength meter log on to: The website of Peter Parker VK3YE.
On a resonant dipole antenna: Length (in feet) = 486/frequency in MHz.
On CW use the *SAR-MAJOR* Edition of 'Are you having trouble... passing the CW Exam?'

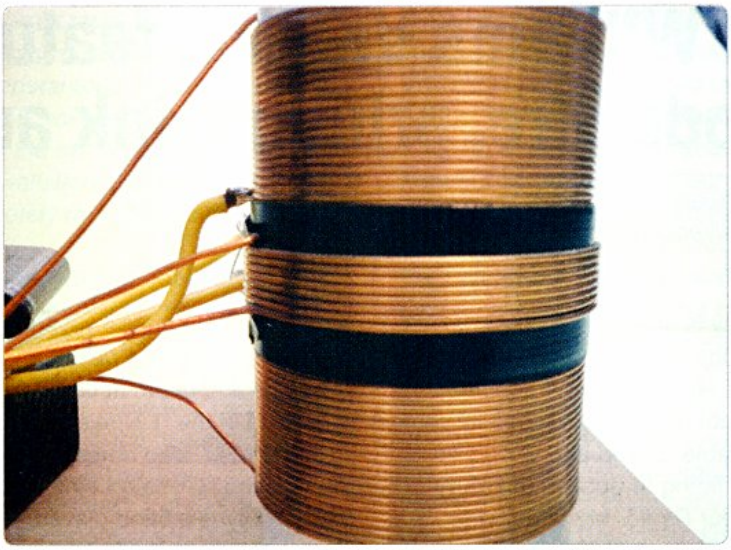


Photo 4: Showing the winding of L1 on top of L2.

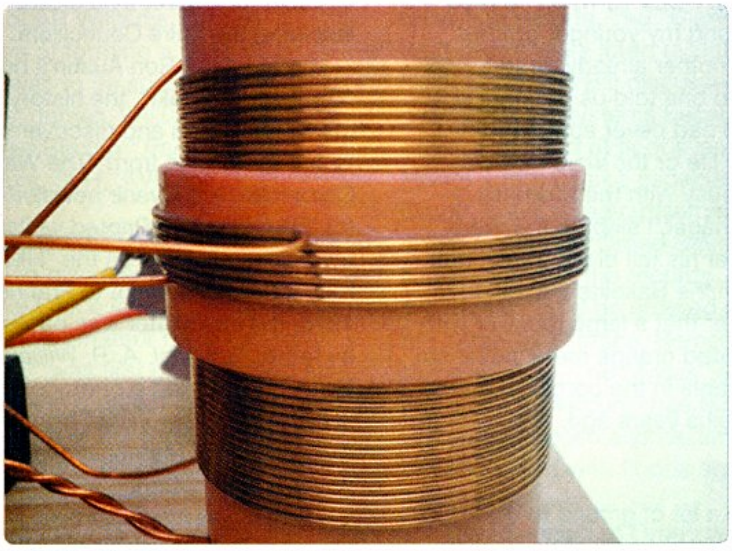


Photo 5: Experimenting for an adjustable L2.

Photo 6: The completed 'Blob Board 500 mW CW transmitter'.

Bill Williams VK3WE, featuring explosions, floods, fire, printer's ink and RF

Keith Williams
e *keith.williams4@bigpond.com*

This story is of a hunt, a quest for information, and the fantastic results attained. However some questions are still not answered. Hopefully you may be able to help and will agree that it is fitting to publish the story in *Amateur Radio*. My father was Archdale Robert (Bill) Williams who was VK3WE between about 1932 and 1958. I was 15 when he died in 1958 and my younger brother 10, our mother already dead for six years. No one told us of father's story; he had never spoken to us of his life or the wars and was always busy with the business. As a teenager, I slept in the radio room near his tall black transmitter rack with the Bakelite panels. I remember that a large receiver with a perforated orange metal cover sat upon a table in the corner. But that was 50 plus years ago.

WW1

We have a lot of ground to cover; I will not dwell on the details. Now retired after working in engineering at television station GTV9 for 30 years, I began by obtaining my father's WW1 records from the National Archives. They showed that he had been apprenticed at the "Lilydale Express" newspaper for three years and was nineteen years old when he enlisted in the AIF. This on 17 August, 1914, three days after recruiting had started. The 8th Battalion sailed just two months later on the "HMAT Benalla" to Egypt. In the early morning of 25 April, 1915, the Battalion landed as part of the second wave of the attack at what is now "Anzac Cove" Gallipoli. Through the Lilydale Historical Society I discovered that he was the first to enlist from Lilydale, and that father's letters home about the voyage to Egypt, training in the desert and about life and death at Gallipoli were published in the "Lilydale Express". The "Express" also notes, below the heading "Lilydale's First Anzac", that the Lilydale band played "Home Sweet Home" when he was welcomed back at the railway station in December 1918, by a crowd including the Shire Councillors.

I purchased Ron Austin's book "Cobbers in Khaki", the history of the 8th Battalion and discovered that Ron was quoting from "The Wallaby Chronicle", a souvenir newsletter for "B" Company. Printed whilst the Battalion sailed on the "HMT Megantic" from Egypt to France in 1916, the newsletter was published by father, "*Lc. Cpl. A. R. William .... Editor*". I obtained a photocopy of "The Wallaby Chronicle" from the Australian War Memorial on Ron Austin's suggestion.

Father was wounded near Messines in Belgium in late June 1916 and hospitalized in England. The 8th Battalion diary indicates that he was likely wounded by a *"minenwerfer"* mortar bombardment that killed five and wounded twenty-five. In his book "The Anzacs", Dr Peter Pederson writes that: - *"the minenwerfer's canister-like projectile turned over and over with a 'woof, woof' sound as it arced through the air. The explosion caused a crater the size of a large room and the shock wave was felt in shelters a mile away"*. Bill worked in the Australian Army Post Office in England whilst recovering before returning to France, and more wounds. Was he exposed to radio or even Morse code at this time?

I have now identified father in the excellent War Memorial group photograph of G Company 8th Battalion that was taken in 1914 at the Broadmeadows camp before they left Australia. You can find it on the web as DAX2564 with his position and as the only person identified; my purchased copy is clearer. The War Memorial now has my transcripts of father's letters found in the "Lilydale Express".

Okay, that was not about wireless but I could not leave it out!

Newspapers and Radio

I then had no idea where father had been next. However he had married in 1917 whilst in England and returned to Australia to be shortly followed by wife Winifred and son Robert. Archdale and Winifred were divorced in 1941 and I photographed the Supreme Court divorce records. I discovered that father had been in Yarrawonga, Daylesford, Charlton, Birchip and then Omeo with some dates given. I had lived in Omeo from age two and knew that father had worked as a journalist, printer and editor. I returned to the Victorian State Library, having already investigated the "Lilydale Express" there, and searched further. I found father's trails in The "Charlton Tribune", the "Birchip Advertiser" and the "Omeo Standard". He had the position of Editor at least with these newspapers, with some ability to affect the content. To date I have not found anything earlier. I searched every issue of these papers for the relevant periods and photographed or scanned many instances in which he wrote about himself, radio and sometimes the family.

The first find at the "Tribune" is an article *"Progress in wireless at Charlton"* that appeared on 30 October, 1926. It is about the beginning of wireless broadcasting services and of a (unnamed) pioneer amateur wireless enthusiast in Charlton. Readers were invited to send in their DX reception reports to the Editor. *"Our Wireless Editor 'Megohm' "* now began to contribute articles.

On 30 March, 1927, under the heading *"Radio"*, The Associated Radio Co. of Australia, (3AR) had appointed Mr. AR Williams of the "Tribune" staff as their local agent and an advertisement showed that receivers could be obtained from AR Williams at the "Tribune" office. In May, a "3AR" receiver was set up in the Charlton Victoria Hall by Bill, with an invitation given to hear the broadcast of the Duke and Duchess of York opening Parliament in Canberra. A radio club had been formed by 11 May, with W. Blanchard as the President, WA Lundy and F Kruger as Vice-Presidents and with AR Williams as the Secretary and Treasurer. An aim of the radio club was to provide a service for townspeople to adjust radios that oscillated and caused interference to other listeners.

The *"Wireless Perfection"* article of 24 October contained a suggestion to contact the *"Charlton Radio Service"* for your receiver, one model, the "Sympladyne" *"wholly constructed in Charlton by A. R. Williams"*. This issue also carried an advertisement from *"Williams and Blanchard"* of "Charlton Radio Service".

The "Birchip Advertiser" is the next newspaper on the list and its editorial for 8 March, 1929 included: *"With the installation of the new machinery, Mr A. R. Williams has taken charge of the "Advertiser" office. Coming to us from the daily paper at the Federal Capital, the "Canberra Times", Mr Williams has had over 20 years' practical experience on provincial journals, and readers have no doubt noted the improvement that has taken place in this journal, both in layout and general tone since he took over control a few weeks ago. He has, during the same period, directed the installation of the new plant, and completely reorganised the whole office."*

Father was not reticent when writing about himself; the 20 years' experience included his apprenticeship and not subtracting time for WW1. However he was also promoting the newspaper. The "Birchip Advertiser" covered the "First Country Conference of the WIA" conducted in Birchip in January, 1934. Interested persons were called to a meeting at the home of AR Williams, for the purpose of forming a radio club which was to be sponsored by Messrs. James, Williams and Harris, the three Birchip *"Transmitting"* amateurs, 3LH, 3WE and 3CH.

Amateur radio, flood and fire

I failed to discover at the WIA National Office (at the old location) when Bill's amateur radio call sign "VK3WE" was first granted, and am still chasing a date. I did discover there some of his entries from the 1930s era *Amateur Radio* journals *(AR)*. Purchasing an issue of *AR* revealed that the WIA Historian, Will McGhie VK6UU, had created a CD of scanned monthly issues of *AR* from its inception in 1933 until 1940. The CD contains 3WE's article for February 1934 about the first Victorian Country WIA Conference, held in Birchip, also a photo of Bill with other participants. Many issues of *AR* contained the "Mallee Notes" written by Bill Williams VK3WE. Details of Gippsland activities appeared following his move to Omeo in 1935.

In June 1936, the Omeo district received four inches of snow then very heavy rains, resulting in severe flooding. The phone lines were down and police requested Bill to contact Melbourne via his transmitter, asking that a message be given to the residents of the Mitta River valley warning of impending floods. Subsequently VK3WE was congratulated in the August issue of *AR* for handling 'Civil Emergency' messages. The Melbourne "Argus" and "Sun" newspapers of 26 June stated that a message had been received from an amateur radio operator in Omeo asking for a warning to be broadcast by the national stations.

In July Bill wrote in the "Omeo Standard" that he would trial the use of his transmitter, re-tuned to the broadcast band, to broadcast within the district during any emergency. He transmitted records (music) when broadcast stations were closed down and asked for reception reports. The "Diary of Keith Scott" (see later) tells that Keith Scott and Bill discussed and built powerful systems because of the likelihood of floods isolating Maffra and Sale and especially Omeo. Later an advertisement appeared in the "Omeo Standard" suggesting that the records broadcast could be ordered through the "Standard" office. Remember this was 1936. The "Argus" and the "Hobart Mercury" has Mr. A Williams of Omeo and his amateur radio involved with floods again in July, 1949.

The township of Omeo was part destroyed on "Black Friday" during the January, 1939 bush fires. The Omeo Hospital, the Golden Age Hotel, 20 houses and 11 shops were destroyed, including the house lived in by my brother Robert Williams and his wife May. Bill had helped to fight the fires for three days until communication was lost on Friday; he then spent 40 hours virtually continuously handling appeals for medical supplies, police messages and personal telegrams. It had been 3.30 am on Saturday before the sections of the Omeo electricity supply to burnt areas were isolated allowing power for his transmitter. Amateurs near Melbourne received and relayed the messages with the assistance of the Post Master General's Department.

The WIA organised amateurs to attend other fire affected areas with radio equipment. An article in the February *AR* states that the VK3WE Omeo system had worked effectively and was retained unchanged. A letter on behalf of the Omeo Relief Committee from VK3WE "Bill" printed in the March *AR* thanked amateurs for their assistance and stated that 731 messages had been passed.

An article "Stockman dies ... Omeo Destruction" appeared in the "Melbourne Argus" newspaper of 16 January, 1939. Likely sourced from Bill, it highlights VK3WE's amateur radio efforts.

I initially found the "Argus" newspaper article of 21 January, 1939 reprinted in the July, 1997 "WICEN News", itself reproduced on the internet. Featuring Bill and about the success of amateur radio assistance during the fires, the article had been reprinted (then 1997) 58 years after the event as part of WICEN history.

Bill had been elected inaugural President of the WIA Victorian Eastern Zone at a Warragul meeting in 1938. He held this position until 1940 and was elected again when the Eastern Zone reformed post war in 1948. Chris Morley VK3CJK, the current Eastern Zone Secretary, has provided entries from the first minute book and a photo of amateurs at the 1953 Amateur Conference in Omeo. The photo was taken in our lounge room, with VK3WE in the foreground.

Googling "VK3WE" on the Internet found me "The Diary of Keith Scott" (VK3SS, Silent Key), who was Bill's close amateur friend from Maffra. Keith tells that he was pleased to share a tent with his friend Bill at "Headquarters Heavy Wireless" during World War 2 and of their common interests. Keith's son David Scott VK3DY was also an amateur at the 1953 Omeo Conference and he has provided copies from his first log book showing his initial amateur contacts (including with VK3WE) and a photo of my brother and I posed in front of all the amateurs in Omeo, myself ten and Royce five years old. I am likely named Keith after Keith Scott.

WW2

Bill was asked to enlist in the CMF Signals in August, 1940 because of his wireless experience. He was 45 years of age and perhaps not of good health. He spent WW2 as an "Instructor" with the "Land Headquarters Heavy Wireless", which was based at Park Orchards Chalet, Ringwood Victoria. Investigating this unit has gained us three War Memorial photos of Sergeant AR Williams V5539, at Park Orchards supervising the construction of transmitters and at the attached transmitter installation at Coldstream inspecting antenna feeders. The Coldstream transmitting site is now St Hubert's Winery. Necessity and the staffs' abilities meant that they initially designed and built their own equipment, including the links to the transmitters at Coldstream, and later, equipment for Rockbank and Diggers Rest. You can find the photos on the web at the War Memorial.

The "Keith Scott's Diary" tells that Park Orchards communicated with London and all capital cities and theatres of war. Later in the war, the Rockbank and Diggers Rest installations took most of the traffic. Keith Scott helped build the antennas at Rockbank. I previously knew nothing of the Park Orchards Chalet history, even after taking my daughter there for a year eleven school social. It is now tired and empty, awaiting development decisions.

Bill and Winifred were divorced during WW2 and he married my mother, Gladys Dorothy "Mollie" (Hoggins) on 26 December, 1941; I was born in 1943.

The "Omeo Standard"

Bill had been the manager and editor of the "Omeo Standard" newspaper from November, 1935 until joining the CMF in August, 1940 and he re-started the "Standard" as proprietor and editor on release from "Heavy Wireless". The pre-war proprietor's estate (Mr. LDE Du Ve) had closed the business in 1942 due to the lack of skilled manpower. After Bill had left there had been four editors. A Mr. JO Holston had purchased the plant, hoping the newspaper could restart for the benefit of the district. Father welcomed back my brother Robert (Bob), post war, to be co-proprietor of the paper but Bob had been a prisoner of war since the 2/2nd Pioneers were captured in Java in March, 1942. The "Standard" had welcomed his return stating that he weighed a little over six stone when rescued in September, 1945. His Army records show that he had been finally at Fukuoka-22 prison camp and coal mine at Honami, Japan. Bob was later advised that he should work outdoors, and left the "Standard" and Omeo in March, 1949. He died in 1975.

On 6 October 1955, Bill wrote about himself in the "Standard" when reporting on the RSL meeting:

*"**Life Membership**. Some months ago the District branch decided to recognise the 36 years membership and of service to the League (the last 19 years in the Omeo Sub-branch) of Mr A. R. Williams by conferring on him the honour of being the first Life Member sponsored by it. The framed certificate ....." etc.*

The "Omeo Standard" records that Bill had also been an office bearer or on committees for the Omeo Football Club, District Football League, Omeo Agricultural Society, Omeo Hospital, Ambulance Service, Omeo Swimming Club and the Church of England. He had attended and reported on all Shire Council meetings and promoted the district charities and endeavours. Also recorded was that my brother Bob Williams had won swimming and Fire Brigade competitions and that I had visited my grandmothers, my dog had been poisoned, our pipes had burst in a minus 9.5

degree C frost and that I had good school results.

AM Pearson MBE, in his book "Echoes from the Mountains", writes that Mr. AR Williams attended the September, 1958 Omeo Council meeting and stated that he was unable to continue publishing the "Omeo Standard". *"The president and councillors spoke highly of his service to the community and recorded a minute of appreciation for his efforts in the community." "Mr Williams had been associated with the paper for 23 years and to produce a paper single-handed was no mean effort."*

Father died on 12 September, 1958. Obituaries appeared in the "Bairnsdale Advertiser" of 15 September and in the first issue of the restarted "Omeo Standard" of 4 February, 1959.

Help wanted

Helpful amateurs have assisted me with father's story. Lately I have been asking questions again, hoping that the WIA Centenary excitement would turn up more; particularly callsign lists for the period 1929 until 1933. So far we can find the VK3WE call first in the 1933 publication "What Station is that" from the Victorian State Library. Peter Wolfenden VK3RV has now found me several exciting QSL cards from the WIA archive that give information about father's rigs and his addresses. The pinecone border on a QSL card reminds me of the tall pine trees that supported VK3WE's antennas in Omeo.

I have now learnt more about WW1 and of early Amateur Radio. I researched a 6v6 Tritet crystal oscillator that was mentioned on a QSL card and have more than only the wedding photo of my father. My own interests spur me to discover more of father's early radio games and it is all an enlightening story. I will be very grateful for further clues that you might give.

The WIA Archive

Peter Wolfenden VK3RV

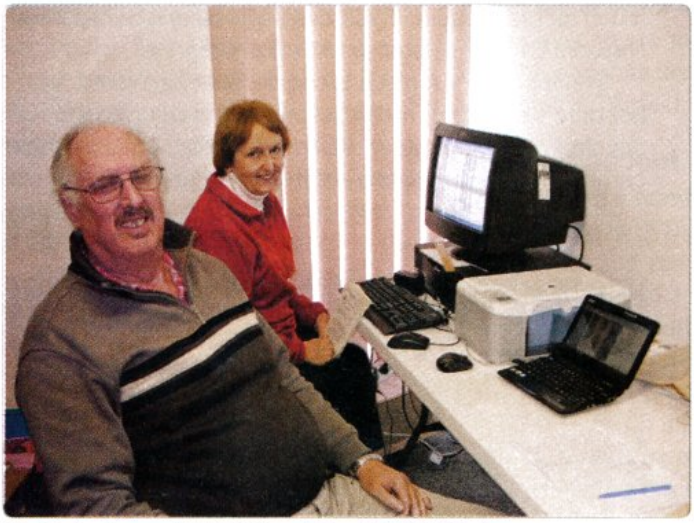


Photo 1: Jenny VK5ANW and Ian VK3IFM in the Archive office.

Not long after the WIA moved to its new premises in Bayswater, Victoria, the opportunity to bring historical material together presented itself. Material had been previously kept both in a commercial store and several individual's houses for many years. This coincided with initial planning for the Centenary of Amateur Radio celebrations and, with it, the need to confirm aspects of the Institute's history.

Two previous Federal Presidents, David Wardlaw VK3ADW and Peter Wolfenden VK3RV, commenced the initial document sorting, seeking historical clues necessary to help to prepare for the forthcoming WIA Centenary celebrations. It quickly became apparent that there was a massive amount of information locked away in the numerous boxes and that some sort of indexing and filing was necessary. Jenny VK5ANW "volunteered" to help out with inputting data into an embryonic data base, which has now grown significantly.

The sorting and cataloguing helped immensely in the preparation of *"An Arena of Wonder"*, published in serialised form in *Amateur Radio*. Many photographs were also "discovered" which not only helped support the magazine article, but were also useful for publicity material and the WIA Centenary celebrations in Canberra.

The National Office frequently receives enquiries about early amateurs, their call signs, locations etc., so it was decided to commence scanning the earliest call books, commencing with the 1914 call book, "Wireless in Australia", a copy of which, in almost mint condition, was found in one of the long sealed boxes. Reference to entries in the call book within the *Amateur Radio* article generated a number of responses and brought

about further historical information from both amateurs and members of the public (courtesy of browsing facilities at the local newsagent).

Recently Ian VK3IFM has offered to help the Archive in a number of areas including the scanning of later editions of the call book. Most scanned copies are searchable PDF files which will speed up searching processes. The collection of scanned call books is now steadily growing.

So where are we at with the development of the WIA Archive?

The short answer is that we still have much work to do – and will for many more years! Many single sheets of paper still have to be read and assessed. A question which needs to be answered at every turn is, "why did someone originally decide to keep this particular piece of paper?" At times the answer is obvious, but frequently it is more obscure and requires knowledge of the history of the subject matter.

Photo 2: Some of the many boxes still to be sorted and, eventually, catalogued.

Photo 3: The shelving – soon to be well stocked with historical information – appropriately catalogued.

The risk, of course is that something important to our history may be inadvertently disposed of! But a positive start has been made and our shelves are starting to fill with "ordered" material.

During the "100th year", many documents and articles were received as a result of the *"Call for Articles"* column in *AR*. Some submissions have been, or will be published in the magazine, but all will be kept in the archives to assist those researching at some later date. Thank you again to all who submitted material.

You may be able to help preserve our history by forwarding historical information, particularly relating to activities within Australia. If you were an office bearer of the Institute, or one of the more active clubs, you may have copies of official correspondence with the old PMG Department relating to early special permits, for example, for modes like RTTY, ATV, Moon Bounce or early repeaters. Even copies of OT's licences and permits are worth preserving. Please consider forwarding them to the WIA Archive.

The archive is also seeking suitable second-hand computer equipment, such as a large format scanner suitable for foolscap (or even larger). Many of our early documents are on foolscap and we wish to digitise as much as practicable. If you can help, please contact the National Office or Peter at *vk3rv@wia.org.au*

The Institute's Archive is rapidly developing into not only a source of historical material relating to the development of amateur radio in Australia, but also radio communication in this part of the world generally.

Photo 4: Some of the shelving already with sorted information in place.

SOTA adventures in the Grampians

Ron Cook VK3AFW

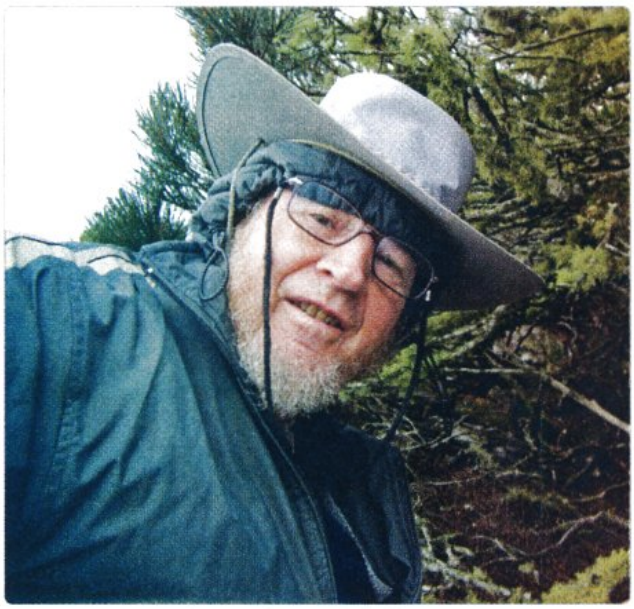


Photo 1: The author on site at Mt William.

What is SOTA?

I have qualified for my Keith Roget Memorial National Parks award (application submitted) so the next challenge is the Summits on the Air (SOTA) activity. SOTA is an activity that originated in the UK and is now up and running throughout the world with Australia becoming part of the activity earlier this year.

Amateur radio operators climb or walk to the top of prominent summits and operate on various radio bands thereby activating that summit. Points are awarded for each activation, with higher summits scoring more points. It is not a competition as such, there being no set times of operation and you set your own goals. If you are interested in radio, mountains, adventure and the outdoors SOTA might be the ideal radio activity for you.

The main SOTA web site can be found at *http://www.sota.org.uk/*

The first Australian registered activity is based in VK3 but other states are not far behind. Details are at *http://www.sota.org.uk/Associations/viewAssociation/prefix/VK3*

Certificates are available for totals of 100, 250, 500 and 1000 points, with 1,000 points earning the Mountain Goat Award for activators and the Shack Sloth Award for contacts with activators.

While much of the travel to the peak can be by vehicle, the final ascent must be made on foot or other non-motorised means and the station must be clearly independent of any transport. There are over 600 peaks registered in Victoria and with other states making progress with their lists the chances are that soon there will be a SOTA peak near you.

The first ascent

I had worked a number of people participating in SOTA over the prior month and decided to take the opportunity to activate a couple of my favourite peaks, Mt William and the Sundial peak in the Grampians. We were travelling back from Adelaide on a Friday, so a 24 hour break at Stawell was taken to allow visiting the Grampians. I had packed my back-pack station which is currently based on an FT-817ND, G5RV antenna held up by a seven metre squid pole and a tuner. Power is either the FT-817's internal batteries or an external gel cell.

Saturday morning was clear with a nice blue sky at sunrise. An ascent of Mt William, the highest point in the Grampians at 1,167 metres was declared 'go'. I had charged up my 12 AH gel cell (too heavy really but guarantees no lack of power) and packed my 50 year old canvas and leather haversack the night before. A good breakfast was devoured and then the haversack and a cut lunch loaded into the car.

It had turned cloudy as I left the motel and the weather forecast was 60% probability of rain but not until late in the day. The Victorian Alps are unpredictable weather-wise, so it was no surprise when I drove into cloud part way up the Mt William Road. The walk to the summit from the car park is two km of mostly steep grade rising 200 metres to the summit but it is a sealed road which makes it easier.

I donned my parka, hat and haversack and grasping the squid pole antenna mast plodded up the mountain. Although I normally walk a fair number of kilometres each week, the previous week had seen more wine and dine than exercise and I quickly came to a halt gasping for breath under the load on my back and the effect of the altitude. After 45 minutes I staggered onto the summit ridge. It was no more than four degrees, very windy with 30 knot gusts and of course very foggy on the summit of Mt William.

After a swig of water from a plastic bottle, a quick recce established that there was a thicket which would shelter me from the wind and enough adjacent open ground to run out the G5RV antenna. I soon discovered that my method of rolling up the antenna wire had resulted in some tangles, delaying the assembly. The rocks were covered in moss and were VERY slippery. The bushes were spiny and spiky and inflicted a few irritating scratches. Making mental notes to not break a leg I pressed on.

The fog was condensing on some of the leaves and care had to be taken to avoid the drips falling

Photo 2: The FT-817 protected by the log book and cardboard box. The haversack with tools is on the left.

onto the rig or log book. My hands were very cold by the time the mast was up and the G5RV wires tied off to the security fence surrounding the broadcast site and a small tree. I ignored the alarming bending of the mast under the wind gusts and was ready to go at the planned time of 1100.

In trying to 'fire up' on 40 metres I discovered the ATU was not responding. The four AA alkaline cells had given up in the cold. So, hoping I wasn't risking blown finals, I connected the coax directly to the FT-817ND and made a point of not reading the VSWR.

I immediately made contact on 7090 kHz with Wayne VK3WAM/p on Mt Richie, a registered SOTA summit, so it was a SOTA summit to summit QSO to start with! Twelve further QSOs were completed on 7095 kHz in the next hour, three VK5s and the rest VK3s. A good result for maybe two to three watts radiated.

Rain started as I packed up. A strap broke on my haversack. Neither dampened my spirit and a repair with some of the light cord I carried got me ready for the descent. It took me 20 minutes to retrace my steps to the car by which time my jeans were wet although the parka kept my head and trunk dry. My broad brimmed sun hat also deflected some of the rain.

The second ascent

The original plan was to do the slightly easier ascent of the Sundial Peak in the afternoon. It is also two kilometres from its car park but requires only about a 100 metre vertical climb. However, before attempting it I returned to Halls Gap and bought new batteries for the ATU and ate my lunch.

It kept raining. Clearly it was too wet for the rig on the Sundial Peak. A small tent could have protected the rig and mike from the rain but I had not brought one.

It was time for a Plan B. I drove to Boroka Lookout thinking that it might be dryer being in the north of the Grampians and some 20 km from Mt William. No, it wasn't. I sat in the car with a hot coffee enjoying passing showers.

I tested my laptop and Telstra mobile USB internet set-up which worked well. What to do next? I decided to wait for Wayne VK3WAM/P to come up on his second SOTA peak for the day, Mt Donna Buang, and give him a contact from the car using the mobile whip and the FT-857D. It was still definitely too wet to take another rig out although by now my parka and wet trousers were drying out. The question was would it fine up in the next hour and let me activate the summit near the Boroka lookout?

At 1520 I managed a scratchy contact with Wayne on his second SOTA peak for the day and 10 minutes later the rain cleared. Would it stay dry? I had the feeling it would so the haversack was hauled out and I set off with squid pole in hand.

There is a short track from the car park to a set of toilets. From there I bush bashed up the hill until a rock cliff was reached. A short diversion got me to a place where I could scramble up. The scrub opened up a bit onto a broad ridge. Walking east on rising ground led to an area where the mast could be raised and the two wires run out. A large nearby rock made a handy table to place the set on. The highest point was a few metres further on but I was within the activation zone and time was of the essence.

The ATU with new batteries quickly tuned and there was Wayne again on 7090 kHz but this time with a good signal.

In half an hour I worked another ten stations in VK1, VK2 and VK3. This was in addition to the second SOTA peak to peak QSO and a National Park to National Park QSO with Wayne. By 1630 the light was starting to fade so I shut down and packed up. The return trip was the reverse of the ascent, a slippery scramble over the rocks and down through the scrub before the car park was reached.

The wrap

Two SOTA peaks activated in the one day! My haversack was in need of serious repair and my jeans were streaked with green (from the mosses) and black (char from the bush fires a few years ago) but I was pretty happy with my first SOTA outing.

It went well thanks to Wayne and the others worked. The little FT-817 performed flawlessly.

And while travelling to and from the Boroka Lookout I worked Peter VK3ZPF in the Mt Richmond and Mt Eccles National Parks, another plus for the outing.

Next time? I will change the antenna to the VK3ZPF multi dipole design so that if the ATU fails the dipole will present an acceptable SWR on at least part of the band. I might look at getting a lighter battery or take the IC-706 to make more use of the battery capacity.

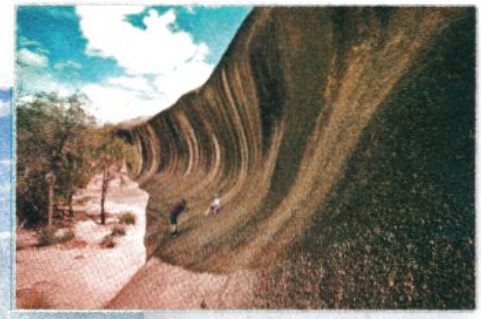
I felt I deserved my steak and glass of red wine that night.

Photo 3: The seven metre squid pole mast and 300 ohm feeder at the site near Boroka Lookout. The low cloud is evident.

2013 WIA AGM and Conference in VK6

Onno Benschop VK6FLAB

Gantheaume Point, Broome. Tourism Western Australia.



Wave Rock, in Hyden. Tourism Western Australia.

View of Mitchell River National Park. Tourism Western Australia.

On the weekend of 25 and 26 May, 2013 amateurs from around the world will converge on the City of Perth in Western Australia to participate in the 103rd Annual Wireless Institute of Australia Amateur Radio exchange of ideas.

Preparations are being made and plans are being hatched. 2013 marks the Centenary of amateur radio in Western Australia and we are expecting to take the opportunity to showcase our hobby as an integral part of society.

From an amateur radio perspective, we are a year from the AGM and Conference, so at this point we cannot give you too much specific information. Activities are likely to include a visit to the Neil Penfold State Amateur Radio Centre, hosted by the Northern Corridor Radio Group. We will likely see activities organised by clubs around the state, including the West Australian Repeater Group, the Hills Amateur Radio Group, the WA VHF Group, the Bunbury Radio Club, the Peel Amateur Radio Group and others.

Under the guiding hand of Bob Bristow VK6POP we are having planning meetings and making all this possible. During our announcement at this year's conference in Mildura we described some of the other activities we might undertake, a visit to the Fremantle Maritime Museum, to Wireless Hill, perhaps some fish and chips at the fishing boat harbour or a ferry to Rottnest.

In the coming weeks we will announce a call for expressions of interest to talk at the technical sessions and we have some ideas on break-out groups that might give you that missing bit of information or a contact you were looking for.

For some of our guests the journey will be counted in minutes, where others will travel from the other side of the earth to participate. It's to those who come from a distance that I'd like to say, when you come, stay for a little while, I promise you, it will be worth it.

Travelling can be costly, but I recommend that you keep an eye on airfares as they regularly bounce around. Of course you could drive across the Nullarbor with a friend and share the journey. Having driven that stretch of road at least half a dozen times I can tell you that there is always something to see – even

if you might have to pay special attention to see it.

If this is your first visit to the Sunset Coast, or if you have been before, but only been around Perth, you should know that this is a big place. It is hard to fathom quite how large Western Australia is unless you have been before and had a look around. Statistics tell you that it is 10 times the size of New Zealand, four times the size of Texas, covers a third of the Australian mainland and has over 20,000 km of coastline. It is over a million square miles of country. This is not a place you can see in two days, nor should you.

So, if you take the time to come, I recommend you take the time to stay and look.

Air travel with radios - An air traveller's tale that almost ended in tears

Peter Ellis VK1PE

In April 2012, my wife and I set off on a trip to France and Italy with a stop-over in Dubai. I bought an inexpensive Chinese 2 m/70 cm FM handheld that would allow me to hopefully 'hit' some repeaters even with four watts.

I carried the radio through the X-ray scanners at Canberra and then Sydney Airport. We landed in Dubai, and enjoyed several days in the United Arab Emirates before our departure for France.

For some reason (the duty-free shopping area), we decided to spend an extra hour at the airport, so immediately checked our luggage at the self-check station and went to the X-ray lines, where my radio was seen and the carry-on bag opened. The radio was removed and I then began two hours of 'hell-on-a-stick'.

After my initial discussions with airport security, I was taken to a police supervisor who (1) asked 'Where is the other one?', and (2) pointed out an A4 sized poster showing prohibited items including 'walkie-talkies'. It was apparent that the UAE (unlike Australia) is of the opinion that terrorists use walkie-talkies. However, no amount of my polite talking would convince this police officer that this was an amateur radio device, and so was okay. He seized the device, and added that I could claim it back during my return journey from Europe (wrong: see below).

I then spent around 90 minutes going between my airline's counters and the police office, saying at times 'please look at the web site of the Emirates Amateur Radio Society http://ears.ae', to finally be told that (1) the device would NOT be returned to fly with me; (2) that there was now not enough time to reclaim my luggage, get back the radio and put it in the bag, and re-check the bag; (3) that I should have had it in the checked luggage (good advice); and, (4) that there was no way to collect items after the date of seizure (true).

Boarding time was approaching. I did not want to give up, but did not want to miss the flight. The radio had cost well under $100 including postage, so the real loss would be some possible contacts in France and Italy.

It was at this point that the detective at the police office called in an Emirates Airlines supervisor, who listened, gave me his business card, and told us to proceed directly to the departure gate where I'd be given more information. A long jog through the duty-free shops later and we were told we were among the last 10 to board. My wife was, by this time, almost in tears. Then, with her already checked in, an Emirates employee arrived with an envelope that obviously contained my radio. I gave my information and this was laboriously written on the outside.

We went to the aircraft via a bus, and the envelope went with the driver and was given to the purser. While still on the ground, the purser came to my seat; the pilot had not allowed the radio to travel in the cabin, and it was now in the hold.

On the ground in Nice, France, I approached the purser and was pointed to the Emirates supervisor, who later handed me the envelope as I was retrieving the luggage. She told me that this system of handling 'suspect' goods had been discontinued several months before and that 'someone was being really good to you', to which I agreed. (I sent the supervisor in Dubai an email thanking him for his efforts).

I had several interesting contacts using repeaters in France and Italy, but not as many as I expected. On the return trip, the radio was in my checked luggage.

Lessons to learn: Even if you know what can and cannot fly in Australia, *do not assume* what is okay elsewhere. The listing of Dangerous Goods at your airline's or an airport's web site may not be the end of the story ('walkie-talkie' is not mentioned; see *http://www.airport.ae/prohibited-items.html* It pays to be polite when talking to officials, and 'know your stuff' (as opposed to 'knowing your rights'). You have to 'know when to hold them, and when to fold them'; and... nothing is worth seeing your other half in tears.

WICEN in Tasmania sets the bar at a new height

Roger Nichols VK7ARN

The 2012 Tom Quilty Gold Cup national equine endurance championships were held at St Helens on the east coast of Tasmania on 9 June 2012.

WICEN provided checkpoint crews and communications between checkpoints and base. Handheld and mobile radio communications between ride officials was also supplied. Other support included track mapping and web based distribution of competitor tracking information.

Endurance riding has been an organised sport in Australia since 1966. One person inspired by the concept of a long distance competitive horse ride was R M Williams. An invitation was extended through his magazine for people interested in conducting Australia's own 160 km (100 mile) in one day ride. It was decided if the Americans could do it, so could the Aussies! The venue would be in the Hawkesbury district, near Sydney, New South Wales.

R M Williams wrote to his friend Tom Quilty, a great horseman and cattleman in the Kimberly area of Western Australia. Williams asked for his support for the 160 km (100 mile) ride, and Quilty donated $1,000. This was used to make a gold cup, the prize for the winner of the event. This is a perpetual trophy, and the ride was named the Tom Quilty Gold Cup in his honour. The original Gold Cup now resides in the Stockman's Hall of Fame, in Longreach, Queensland.

Cash prizes were originally offered as an incentive for competitors, however at the last minute it was pointed out that local by-laws prohibited racing for money over public roads. A meeting of riders and officials was held, and all resolved to ride for the satisfaction of simply participating, and for the honour of wearing the handsome silver Quilty buckle. The Quilty buckle is still a highly regarded prize in endurance with those who earn one treasuring it as equivalent to an Olympic Gold Medal.

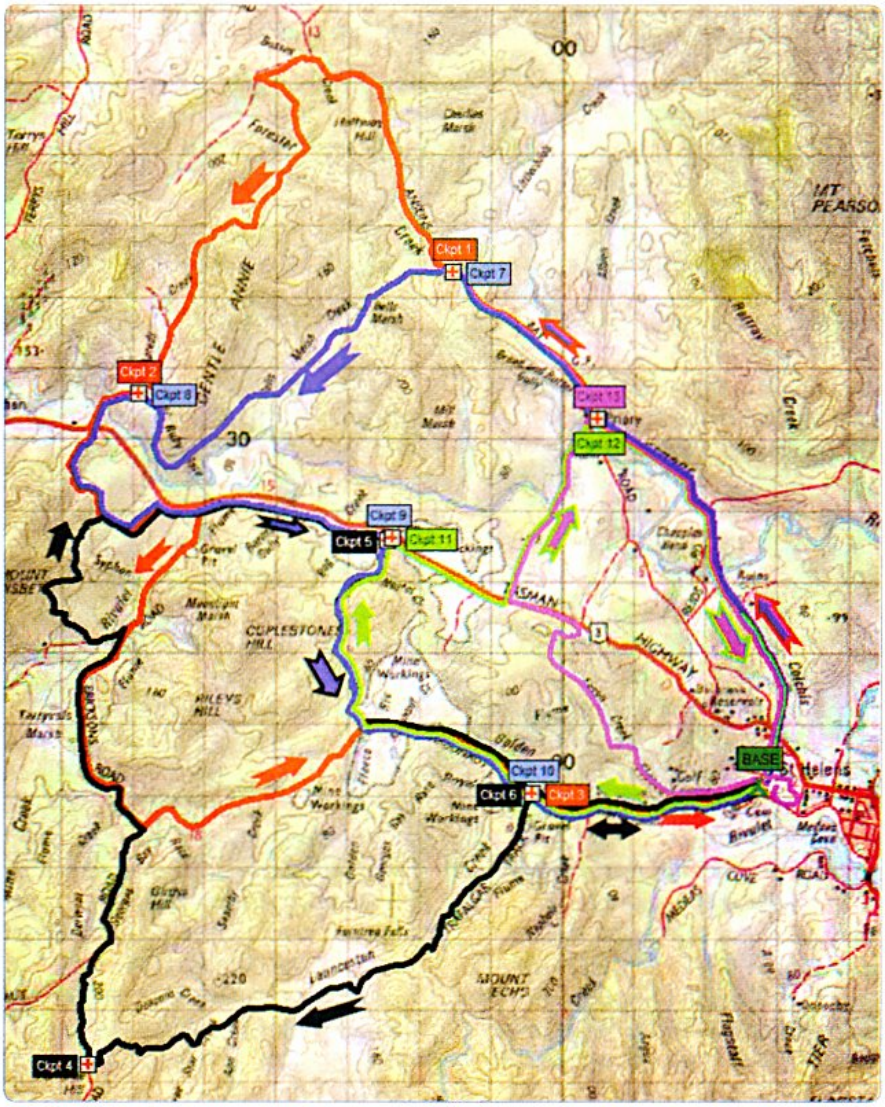


Figure 1: The full arrowed course map.

The sport grew over the next several years, with fifty mile rides being conducted in all the states, and the annual Tom Quilty Gold Cup 160 km (100 mile) ride in NSW. Endurance riding began to be accepted as part of the horse scene, with Williams's Hoofs and Horns magazine giving the sport coverage.

The Quilty was considered as the National endurance ride, with its location being fairly central for riders, except for those in Western Australia. In 1986, a referendum of all endurance riders in Australia resulted in the decision to move the Quilty from state to state in rotation. This gave endurance riders in each of the six states the chance to compete in the Quilty in their home state, and not have to travel large distances to compete. The rest is history and St Helens was the venue for the 2012 Tom Quilty Gold Cup!

Photo 1: The Tasman checkpoint at night.

Due to Bass Strait transport difficulties and expense, the field this year was low at 114, compared to the more normal two to three hundred.

The 160 km ride is in five legs of decreasing length, roughly of 43, 40, 35, 24 and 18 km at St Helens. The front runners completed the course in a little over 12 hours, including compulsory rest breaks, whilst the tailenders got home in 21 hours. The ride slogan is 'To complete is to win'. Those who did were awarded a Tom Quilty silver belt buckle, and 54% of the riders completed the course. The actual winner was awarded the Tom Quilty Gold Cup.

The ride is a test of the riders' and horses' fitness but horse welfare is paramount. The mounts are checked by a vet at the end of each leg and must meet set requirements. So, if a rider pushes too hard he or she will be 'vetted out'.

Our team included 17 from or with WICEN South, four from the Cradle Coast and six from the northern Tasmania amateur radio clubs. Local volunteers assisted as time recorders and runners. In all, almost 40 people were involved in our direct tasking. In addition, a further ten ride officials were provided with radio communications on commercial VHF and UHF frequencies licensed to WICEN.

Our advance party arrived in St Helens on Wednesday 6th June, being joined by the others between then and the ride start at midnight on the Friday night. Our primary task was to look after 13 checkpoints at six different locations in the country around St Helens, plus our base station in town. This job included establishing and maintaining radio communications between the checkpoints and base, recording and transmitting to base the time of passing of each rider, calling for any assistance needed, for example a float for a lame horse, and making sure water troughs were topped up. In addition, self preservation in the close to, or sub zero night time temperatures needed some attention. Video evidence from at least one checkpoint location indicated that entertaining weary riders was also a focus.

The checkpoint radio network on two metres was initially via a repeater at one of the checkpoints. Though not totally necessary, the repeater ensured excellent comms throughout. Later, when the more difficult checkpoints were

TQ12	TYPE	20:11	Leg 1				Leg 2				Leg 3					Leg 4			Leg 5			
Rider	Status	Start	L1C1	L1C2	L1C3	L1F	L2C4	L2C5	L2C6	L2F	L3C7	L3C8	L3C9	L3C10	L3F	L4C11	L4C12	L4F	L5C13	L5F	Rider
1		0000	C	0125	0223	0235	0417	0515	0537	0547	0720	0745	0811	0833	0843	1025	1053	1122	1245	1325	1
2		0000	C	0130	0242	0303	0504	0644	0716	0742	0934	1015	1105	1140	1202	1357	1448	1544	1802	1918	2
3	V	0000	C	0130	0242	0303															3
4	V	0000	C	0118	0214	0228	0421	0522	0545	0600	0818	0834	0855	1011	1035						4
5		0000	C	0130	0227	0239	0435	0534	0559	0615	0821	0857	0942	1025	1048	1307	1408	1458	1703	1806	5
6		0000	C	0113	0202	0213	0351	0442	0503	0515	0659	0716	0754	0813	0823	1003	1034	1104	1226	1259	6
8		0000	C	0136	0236	0303	0500	0620	0652	0716	0932	0955	1017	1051	1110	1322	1408	1454	1715	1838	8
9	V	0000	C	0130	0240	0303	0500	0618	0657												9
10	V	0000	C	0113	0202	0313	0351	0442	0503	0515											10
11	V	0000	C	0130	0240	0303	0500	0618	0657	0722	0911	0954	1041	1115	1145	1357	1449	1549			11
12		0000	C	0135	0244	0321	0502	0616	0645	0701	0932	0940	1029	1107	1131	1330	1256	1504	1708	1813	12
13		0000	C	0126	0231	0247	0451	0600	0630	0647	0836	0904	0946	1018	1033	1321	1240	1359	1537	1619	13
14		0000	C	0126	0231	0247	0451	0600	0630	0647	0836	0904	0946	1018	1033	1240	1321	1359	1537	1619	14
15	V	0000	C	0138	0246	0300	0453	0600	0630	0647											15
16		0000	C	0142	0300	0314	0529	0653	0721	N/A	0935	1019	1105	1145	1207	1429	1527	1621	1800	1902	16
17		0000	C	0113	0203	0215	0358	0458	0523	0535	0711	0740	0811	0833	0843	1037	1110	1146	1312		17
18	V	0000	C	0135	0247	0303															18
19	V	0000	C	0136	0236	0303	0500	0620	0652	0716											19
20	V	0000																			20
21		0000	C	0125	0223	0235	0407	0504	0524	0535	0705	0728	0754	0814	0824	1000	1034	1104	1226	1257	21
22	V	0000	C	0126	0229	0243	0425	0522	0547												22
23		0000	C	0134	0239	0253	0450	0632	0631	0649	0836	0914	1008	1053	1117	1326	1420	1524	1755	1923	23
24		0000	C	0135	0244	0321	0502	0616	0645	0659	0853	0935	1023	1058	1115	1329	1413	1451	1746	1843	24
25		0000	C	0118	0217	0230	0407	0509	0535	0559	0731	0759	0827	0855	0911	1104	1138	1211	1349	1450	25
26		0000	C	0146	0311	0330	0542	0706	0742	0804	1026	1103	1147	1220	1238	1457	1541	1620	1834	1903	26
28		0000	C	0145	0301	0321	0505	0616	0646	0659	0855	0931	1023	1056	1113	1327	1415	1457	1659	1756	28
29	V	0000	C	0125	0223	0238	0455	0616	0650	0711	0904	0944	1029	1105	1127						29
30	V	0000	C	0125	0224	0239	0430	0536	0606	0624	0816	0849	0946	1034	1107	1322	1408	1458			30
31	V	0000	C	0118	0215	0229	0420	0522	0553	0606											31
32	V	0000		0125	0224	0239															32
33		0000	C	C	0216	0228	0407	0509	0535	0549	0738	0805	0837	0909	0934	1150	1246	1342	1543	1635	33
35		0000	C	0135	0248	0305	0510	0633	0701	0723	0914	0954	1041	1115	1145	1357	1447	1546	1757	1914	35
36		0000	C	0135	0248	0305	0510	0633	0701	0723	0914	0954	1041	1115	1145	1357	1447	1546	1757	1914	36
38	V	0000	C	0111	0156	0206	0330	0431													38
39	V	0000	C	0136	0240	0252	0439	0546	0615	0628	0807	0835	0913	0934	0946						39
40		0000	C	0136	0240	0252	0439	0546	0615	0628	0807	0835	0913	0934	0946	1134	1206	1241	1403	1443	40
41		0000	C	0113	0210	0222	0404	0504	0525	0536	0706	0728	0754	0813	0823	1004	1034	1104	1226	1259	41
42	R	0000		0113	0210	0223															42
43		0000	C	0130	0239	0258	0504	0630	0702	N/A	0948	1026	1118	1200	1226	1457	1552	1639	1844		43
44		0000	C	0130	0239	0258	0504	0630	0702	N/A	0948	1026	1118	1200	1226	1457	1552	1639	1844		44
45		0000	C	0142	0311	0329	0542	0706	0742	0804	1026	1103	1147	1220	1238	1457	1541	1620	1804	1903	45
46	V	0000	C	0146	0305	0316	0520	0633	0707	0725											46
47		0000	C	0146	0305	0328	0504	0731	0759	0823	1030	1110	1200	1239	1306	1512	1557	1651	1855		47
48		0000	C	0146	0305	0326	0534	0731	0759	0823	1030	1110	1200	1239	1306	1512	1557	1651	1855		48
49		0000	C	0125	0229	0252	0504	0644	0716	0742	0934	1015	1105	1140	1202	1357	1448	1544	1802	1918	49

Figure 2: The Web based competitor tracking sheet.

completed and closed, the network was switched to simplex. Stations were varied in equipment with various mobile rigs and antennae ranging from vehicle whips to collinears on six to nine metre masts. The repeater was an Icom FR3000 with 1.8 MHz offset

We had worked the area several times before so little prior testing and survey was needed. These earlier rides had included APRS and simple GPS rider tracking. This enabled WICEN to supply the maps and elevation profiles used on the Tom Quilty web site and in ride literature.

A secondary function was to make the tracking data as widely available as possible, in the shortest possible time. This was achieved in three ways. First, as a rider passed through the final checkpoint on each leg, details were transmitted to base and the rider number was announced on the PA system, enabling the appropriate 'strapper' to prepare.

For the wider availability of tracking data, a web based system was developed and used, with great success. We have used a spreadsheet based recording system for a few years, usually displayed on an additional monitor so the base radio operator can keep an eye on the data entry and interested parties can 'sticky beak' without breathing down the neck of the data entry operator. Using the Excel facility of simultaneous saving the Excel file as an html file and frequent uploading to a web server, the data was available worldwide and rarely more than a couple of minutes old.

Many supporters, and some competitors, monitored progress using internet connected smart phones, iPads, PCs or the like. We also understand supporters 'back home' monitored progress, including, that we know of, in England and in Italy!

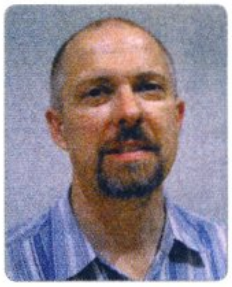
For those not suitably equipped, an additional 1200 x 1920 monitor, in portrait orientation, was placed in the window of the base HQ. The monitor was attached to its own web connected 28 cm (11 inch) Macbook and displaying a scripted version of the uploaded file, so as to refresh every minute and page scroll every 20 seconds to cover the full field, which needed more than one screen page to display fully at a legible size.

Photo 2: AR promo at base with Stu VK7NXX in the background.

Telstra's 3G network was used for upload and download and performed well. Two independent systems were used. The main data entry Toshiba Tecra PC using a Telstra Elite USB 'dongle'. The additional in the window display used a Telstra Elite Network Gateway (Netcomm 3G21WB). As the file size increased, reaching 536 KB, downloads did sometimes hesitate, causing some breath holding, but overall was quite satisfactory. The event, including our first ever live tracking system, was judged a huge success.

The opportunity was taken to promote amateur radio with strategically placed signage. The organisers gave WICEN and amateur radio in general a good write up in a half page piece included in the full colour ride handbook.

Those taking part were VK7s ARN, CL, DC, FLAK, FMRS, FNJS, FRIK, FROO, FTAZ, GW, KPC, KTN, JGD, MGW, MX, NXX, TPE, TRF, TW, VAO and VKV, with Allan, Dave, Jess, Maureen, Terry and Wayne. Thanks also to the supporting XYLs not listed and to WICEN Victoria for passing on their Tom Quilty communications handbook, developed for the 2009 Tom Quilty held at Tonimbuk in Victoria.



VK7news

Justin Giles-Clark VK7TW
e *vk7tw@wia.org.au*
w *groups.yahoo.com/group/vk7regionalnews/*

The dynamic duo of Rex VK7MO and David VK3HZ have been at it again with an aircraft scatter contact of 462 km on 24 GHz from VK1 to VK3 and a troposcatter contact at 260 km. Congratulations to Rex and David.

VK7 Regional News Broadcast

A short five minute online tick and flick survey has been created to ensure the VK7 Regional News is meeting our VK7 amateur radio needs. There are only 10 questions covering listeners, listening, content, length, style and advertising. It will help the broadcast team to improve and to shape future VK7 Regional News Broadcasts. The survey will be available until the end of August at *http://www.surveymonkey.com/s/N52VG8Y*

VK7 Repeater News

VK7RRR is the first public VK7 D-STAR repeater compliments of Don VK7YXX. It is located at Richmond in southern Tasmania and is on 70 cm. VK7RRR uses a DV-RPTR DSP GMSK modem in combination with the DV-RPTR repeater controller and ircDDB gateway software and this allows linking with D-Plus/REF, DExtra/XRF and x-Net/DCS reflectors worldwide. Frequencies are TX on 438.125 MHz with 50 watts output and RX on 432.725 MHz. For more information take a look at *http://www.vk7rrr.info* Thanks to Don for this information.

VK7RBH on Ben Lomond featured in last month's *AR* magazine with a new antenna and it has been found that it may be VK's highest repeater at 1570 metres. On 16 June, Peter VK7PD put the WIA and VK7 Regional News broadcasts out on VK7RBH. There were six call-backs from all over the state including Burnie, Hobart, Launceston, Deloraine, Arthur's Lake, St Mary's and the Midlands Highway. VK7PD let the author know that RBH has an interesting property, reported by Ken VK3NW. It can often be accessed from the Geelong area when no other VK7 repeater is audible on VHF or UHF, except for the VK7RAE beacons!

VK7RAC on Table Cape has a new Diamond V-2000 vertical tri-band six, two and 70 cm antenna on the highest part of the tower. It has been reported that the coverage of the 70 cm repeater has certainly improved. Thanks to David VK7DC who is the custodian of the Table Cape repeater for this information.

Northern Tasmania Amateur Radio Club

NTARC's June meeting was a show and tell session and uncovered some interesting projects going on in the club. Included was Peter VK7PD's homebrew 10 GHz equipment and Vice-President Lewis VK3FLPL's college HF receiver project which Lewis supervised while in East Timor in 2002. From reports this was a great example of ingenious use of salvaged material and components and was inspiring.

Ambulance Tasmania Communication Training Centre – Roger Woolley (centre) taking the attendees through a medical emergency scenario. Photo courtesy VK7TW.

Radio and Electronics Association of Southern Tasmania

Our four newest Foundation licensees reported last month have received their callsigns: Lee VK7FAAI, James VK7FAAL, Tony VK7FTNY and Andrew VK7FAAJ. Congratulations and if you hear them on air give them a shout and welcome them to the hobby.

REAST's June visit was a very entertaining tour of the new Ambulance Tasmania Communications Centre hosted by Roger Woolley (formerly VK7HRW). Roger is the supervisor at the centre and started with a great historical overview then went into the very modern and well equipped new centre. This modern area houses the patient transport and main communications operation with operators for the NW, north and south of Tasmania. Operators sit at ergonomic surround desks with multiple touch screens connected seamlessly to modern trunked communications and internet enabled equipment. The ambulances are fitted with Simoco PRM9000 GPS enabled radios.

Roger described and demonstrated the Computer Assisted Dispatch (CAD) system and the questions that the operators run through when there is a person with a medical emergency on the phone to determine the help required and its urgency. A great night and a big thank you to Roger who, the author understands, is currently studying for his Advanced licence – on ya Roger!

The DATV Experimenters Nights have seen some big nights of show and tell with a Raspberry Pi theme, crystal sets, 1918 valves, Enigma memorabilia, Morse keys, naked CCTV cameras, USB Stick digital TV receivers converted into software defined radios covering 54-1800 MHz and Patrick VK7FPJB took the audience through his campaign to start a hackerspace in Hobart. Our videos have included the Tom Quilty Equine Endurance event at St Helens, Dick Smith VK2DIK's talk at the WIA Centenary weekend, Richard VK7RO on the history of the Queen's Domain Marine Wireless Station including its early use with the 1911-1913 Mawson Expedition to Antarctica and a fascinating talk and film given by Des Whayman, a retired cray fisherman. When does this all happen? On Wednesday nights at 7:30 pm in the Queens Domain DATV studio and we stream the content via batc.tv – member stream – VK7OTC.

Silent Key

Robert Milne VK7ZAL and **AX2TAR**

Robert died on 21 June, 2012. He was 71 years old.

Robert gained his amateur license in 1959 and was a keen experimenter and homebrew builder. His interests included operation on 10 GHz and amateur television on 70 cm.

In 1994 he obtained an experimental license AX2TAR and for the last 11 years of his active radio life he concentrated on transmitting and receiving on 176 kHz.

Vale Robert.

Submitted by Ric Rogers VK7RO.

Participate

August 11 - 12 **Remembrance Day Contest** - CW/SSB/FM

August 25 - 26 **ALARA Contest** - CW/SSB

VK5news Home brew at the SERG Convention

John Drew VK5DJ

The SERG Convention is held each year in Mount Gambier over the June, Queen's Birthday weekend. The two most important events are the Australian Fox-Hunting Championship and the home brew competition. Usually there are one or two entries in the home brew competition that are direct spinoffs from the fox hunting. This year it was no exception but the *pièce de résistance* was Greg VK5ZGY's 'Confusing Fox'.

It has become clear that the skills of the hounds are becoming more and more finely tuned, so this year Greg thought it was time we (the fox) started making things more difficult. Greg built a rotating stage which housed a 12 V car battery, an FM92 FM transceiver, an MP3 player with a simple TX timer and a windscreen wiper motor and gears. At the top of the platform was a single folded dipole for two metres. The whole show rotated about once per second and using the directional properties of a horizontal dipole Greg created a signal that oscillated in strength and hopefully caused varying reflections too. The fox hunters were nonplussed but you can't keep good hounds down and ultimately they all found the fox. What will Greg or others come up with next year to make things hard? Greg's 'Confusing Fox' gained second prize in the homebrew competition.

First prize went to Lou VK3ALB's crystal set. It was a unique design that made use of two basket weave coils. It is not very often that the judges see these coils and they were beautifully home wound by Lou. The Q must have been very high. The two units, enclosed in nicely made wooden boxes, formed the crystal set. One was the antenna tuning unit and the other the detector unit. The ATU was an independently tuned component placed for minimum coupling and maximum Q up to a metre from the crystal set. This was possible because of the extremely low loss construction of the two lightly coupled basket weave coils. For those who build crystal sets that often hear two stations at once due to the loading of the diodes on the coils it was amazing to see the list of separated stations that Lou had heard on his crystal set. Well done Lou.

Third prize went to Colin VK5HCF for his build of a kitset digital L/C meter. It was Colin's first attempt at a project and he did an excellent job of it; his soldering was very good and instructions had been carefully followed resulting in a valuable piece of test gear for his shack. The judges commented that kits were an excellent way of getting started with home brew and encouraged others who haven't yet wielded a soldering iron to have a go; it's a very rewarding thing to do.

Photo 1: Two high power amplifiers from Bob VK3ZL. On the left is a full power water cooled amplifier for 20, 15 and 10 while on the right a legal limit amplifier for two metres.

Photo 2: Spinning fox antenna by Greg VK5ZGY, a rotating dipole for two metres to confuse the hounds. On the left are two of the modified TV amplifiers by Gary VK5JR.

Bob VK3ZL is a master builder. The judges always look forward to seeing Bob's amplifier builds. He knows exactly what to do to make an efficient and safe high power amplifier. This year Bob displayed a 20/15/10 three band, water cooled, 400 watt amplifier and a two metre, high powered amplifier and for this he was awarded fourth prize.

Photo 3: Winners of the Australian Fox Hunting Championship, the VK3BLN team from left: Graham VK3ZKM, Adam (no call), Marta VK3FTZL and David VK3XAJ.

Others to receive prizes included Colin VK5DK's 5.7 GHz home station built using the VK3XDK boards and WB5LUA RX preamp with a modified commercial pre-amp; Bruce VK3TJN presented a direction finding compact two element six metre beam that proved itself during the six metre foxhunts; Gary VK5JR's successful modifications of ex TV transmitter modules to provide legal limit amplifiers for six metres, two metres and 70 cm – a very impressive set of three amplifiers easily driven by a standard transceiver; Chris VK5MC showed a 50 W 1296 MHz PA based on VK3PY's article in *AR* and a home brew combiner board on an ex commercial heatsink. This unit has successfully completed many EME contacts. Lastly John VK5DJ showed his beam control unit which had to undergo urgent maintenance when a wire fell off a pot used to simulate an encoder – well soldered Greg.

The South East Radio Group was again supported by a generous anonymous donor who provided the money for the prizes. Thank you whoever you may be.

The club was pleased with the number of entries. Judges, Chris VK5MC and John VK5DJ emphasised that the homebrew competition is there for everyone to enter; no matter how simple the project there is a good chance it can win a prize, but more importantly give the builder a great sense of achievement in the doing.

Spotlight on **SWLing**

Robin L Harwood VK7RH
e *vk7rh@wia.org.au*

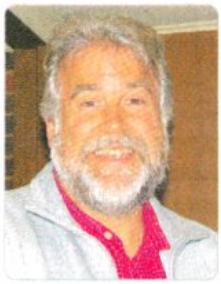
As I am writing this on Friday June 29, I have been witnessing the final shortwave broadcasts from three major international broadcasters, namely Radio Netherlands, Radio Canada International and the Vatican Radio. All these happened during the final week of June. The Canadians were the first, ending their shortwave presence with highly emotional good-byes from their staff. This caused panic though various international stations that had entered into co-operative agreements to share the Sackville site to reach audiences in the Americas. This also caused the Vatican to decide to cease MW and shortwave broadcasts to Europe and accelerate their plans to go over to an Internet platform. I believe that the Papal See has applied for the *.catholic* header from the ICANN who are responsible for Internet domains.

At present, Sackville is still being used by NHK and South Korea for broadcast to the Americas but at a reduced capacity. The Canadians are apparently keen to dismantle the site and sell it, possibly as the site for a wind farm. The only transmission emanating from Hilversum now is a Spanish program in support of press freedom in Cuba, Mexico and Venezuela. The Vatican Radio will continue with shortwave programming to Africa and Asia. I also believe that the court case brought by a local council over the effects of electromagnetic radiation on public health about a decade ago may have also contributed to the decision to dramatically curtail the use of the Vatican Radio's extra-territorial site, due to the rapid urban sprawl nearby.

I have previously reported that the BBC World Service was leaving their home for 80 years, Bush House, which is quite close to Australia House on the Strand. This has now happened and they are now located in a new Broadcasting House in Portland Place, which has been the site for domestic programming for a similar amount of time. Incidentally the last program from Bush House was an English news bulletin at 1100 on July 12. Truly an era has ended.

Propagation was severely disturbed throughout June and there were no Europeans present as in previous years around my local midday. Signals were always there with a pronounced auroral flutter, especially on six and seven MHz but now there was absolutely nothing. In fact band occupancy has dramatically shrunk compared to even a year ago. When this cycle does peak, only the amateurs and utilities will be there to take advantage of the solar highs.

Spring is just around the corner so let us hope that there will finally be some decent propagation.



VHF/UHF - An Expanding World

David Smith VK3HZ
e *vk3hz@wia.org.au*

Weak Signal

The Winter VHF/UHF Field Day was held over the weekend of 23/24 June and was, predictably, a rather cold experience for many. In VK3, rain threatened for much of the time, reducing the numbers out on the hilltops. Activity further north seemed somewhat subdued also, judging by reports received. As at the end of June, the following had submitted logs for the day:

VK1 MT
VK2 HZ MB XN ACL BOZ WFD
VK3 GL HY KH WT ZHQ FASW FEZZ
VK4 CZ ADC AMG KLC TGL VDX
VK5 KC MK OQ ZD GRC FDCA FMLB

Geoff VK2MIA reports:

The Manly Warringah Radio Society (VK2MB) activated QF56OH for around four hours on Saturday afternoon from the corner of a sports oval on top of a hill. We had contacts on six metres, two metres, 70 cm and 23 cm and a great day - even suffering a little sunburn (not bad for the 3rd shortest day of the year!). As soon as it got dark, we packed up as we weren't keen enough to try and operate overnight.

Justin VK2CU managed to activate seven gridsquares:

Sunday morning was rather cold. The Falcon's thermometer said it was -10, and everything was covered in ice. This was 30 km east of Guyra, NSW. Ford Australia's new injected LPG system started with no problems, though it took me a bit to fire up.

Once the sun came up, things warmed up nicely. Went to the hill south of Guyra to try SW QLD - not much happening though. A LSD and traction control was required to climb this icy grassed hill, complete with lots of sump smashing boulders (who needs a 4WD?).

Photo 1: The crew from VK2MB enjoying the winter sun.

Then it was off to Ben Lomond QG50 - a truck rest area along the New England Highway.

Matt VK2DAG reports:

Did someone say cold! Holy snapping duck poo it was COLD!

Woke up 5:30 am Sunday morning sitting in the driver's seat with five layers on, inside a -5° sleeping bag with my Russian hat on and it was still cold enough to wake me up. Brrrrrrr... I need a better sleeping bag. I haven't suffered that bad from the cold since I was wearing green stuff. Never again without better/ warmer gear!

Photo 3: VK2DAG warming up.

Big setup at QF48 near the entrance of Coolah Tops NP. The farmer whose land I was on came over for a chat. He asked how I made out the night before because it was so brutally cold! That's saying something coming from a local...

There weren't many on, that's for sure. And the very small tropo and AE openings made it hard when I hear guys chatting about the weather and stuff and then the opening's gone – cry. Overnight in QF47 I could hear the Dural beacon all night at 579 and not a voice to be heard. Sitting in the ute tray with frost settling on me would be a bit more interesting if there was someone to talk to.

Please send any Weak Signal reports to David VK3HZ at *vk3hz@wia.org.au*

Photo 2: VK2CU's microwave setup.

Digital DX Modes

Rex Moncur VK7MO

24 GHz Tests

On 13 June Rex VK7MO (see Photo 4) assisted by Ian VK3AXH climbed the fire tower at Mt Buninyong near Ballarat to check out Rex's 24 GHz system with David VK3HZ and Alan VK3XPD operating from their home stations. After David sorted out some problems with his GPS locking, signals reached 5-9 plus both ways over a 106 km path. Alan could see Rex's signal on SpecJT but was blocked by trees and was unable to complete a two way contact.

24 GHz aircraft scatter

On 17 June, Rex VK7MO (portable at the QTH of Chris VK1DO) worked David VK3HZ on 24 GHz via aircraft scatter using JT65c over a distance of 462 km, establishing a new 24 GHz digital mode distance record. Many aircraft did not produce useful decodes and it took some five hours and around 30 aircraft to complete the QSO. A detailed report is at: *http://www.vk3hz.net/microwave/462km-24GHz-Aircraft-Scatter-QSO.pdf*

24 GHz tropo-scatter

Between 26 and 29 June, Rex VK7MO and David VK3HZ conducted a series of tests over non-line of sight paths to gauge the usefulness of tropo-scatter on 24 GHz. The best distance achieved was 176 km on SSB and 268 km on JT65c. A detailed report is at: *http://www.vk3hz.net/microwave/24GHz-Troposcatter.pdf*

Please send any Digital DX Modes reports to Rex VK7MO at *rmoncur@bigpond.net.au*

The Magic Band – 6 m DX

Brian Cleland VK5BC

Scott VK4CZ summed up June as follows *'With the movement of the sun to the northern hemisphere, and the associated demise of the F2 and TEP propagation we'd experienced from January through to May, the doldrums of winter Es are now firmly installed! The last of the northern hemisphere TV video was received via TEP on June 12, 2012.'* After a quiet May winter E's began in the first week of June. Most openings were down the eastern seaboard with an occasional opening from VK2, 4 and 7 to VK5 and ZL. Unfortunately southern VK6 missed out with no openings/contacts recorded to the east.

1st June Frank VK7DX reported ZL beacons and worked Peter ZL4LV and again on the 3rd June Frank reported ZL2WHO/b and ZL3SIX/b and this time worked Neil ZL3ADC. Norm VK3DUT reported ZL beacons on the 4th June but no contacts.

5th June band livened up with good openings from VK4 to VK3, 5 and 7. Brian VK5BC and Rob VK3XQ worked Scott VK4CZ and Les VK4ALH, Rob also completing with Brian VK4EK in Sapphire while Jack VK2XQ reported hearing ZL beacons.

Frank VK7DX was back in the action again on the 6th June working several VK4's while John VK4TL near Cairns reported evening TEP into JA and completing with JA2DDN and JA2OGB.

VK4s between Hervey Bay and Brisbane were again in the action on the 7th June working into VK3, 5 and 7 while later in the day VK4FP and VK4FNQ from far north VK4 worked into southern VK2 and VK3. Leigh VK2KRR also reported Derek VK6DZ on WSPR.

Again on the 8th June, VK4s again worked into the southern states but the band also opened from VK2 to VK5 and western VK3 with strong backscatter signals between Brian VK5BC and Steve VK3ZAZ.

10th June saw more Es down the eastern seaboard but of interest was the reporting of the VK6RSX beacon from NW VK6 by Frank VK7DX, Steve VK3ZAZ and Brian VK5BC. Frank and Steve completed with Rod VK6KP in Karratha.

Photo 4: Rex VK7MO with his 24 GHz set-up on the Mt Buninyong fire tower. Photo by Ian VK3AXH.

Frank VK7DX completed with Peter ZL4LV on the 12th June and Ken ZL3OZ on the 13th. Scott VK4CZ also reported ZL beacons on the 13th and worked ZL4AX/m and heard ZL1NX while Colin VK2BCC worked ZL2, 3 and 4.

Frank continued to work in to ZL again on the 14th and the 19th, this time ZL3OZ and ZL3JT. Good opening between VK4 and VK5 on the 18th with Jeff VK5GF and Brian VK5BC working several VK4 with S9+ signals.

25th June good openings again around midday down eastern seaboard with Scott VK4CZ and Mike VK2ZQ working Bob ZL1RS. Later the band opened from VK2 Wollongong area to VK5 with Brian VK5BC working John VK2FAD, John VK2BHO, Mike VK2ZQ with conditions then moving to VK7 with good contacts completed with Dave VK7DD and Frank VK7DX.

27th June more Es down the eastern seaboard with Scott VK4CZ working Dave VK7DD and Frank VK7DX. Frank as usual worked into ZL and along with Norm VK3DUT worked Peter ZL4LV. 29th Scott VK4CZ worked Ross ZL3ADT.

Hopefully July provides further E's to keep the shacks warm in winter and allow some experimenting with rigs, antennas and so on, to be ready for the next equinox period when hopefully there is a little more activity on the sun and we see some improvement in the solar numbers.

Please send any 6 m information to Brian VK5BC at *briancleland@bigpond.com*

Silent Key

Matthew Stuart Millowick VK5MS

June 11, 2012 marks the anniversary of the passing of Stuart Millowick VK5MS. Stuart passed away on June 11, 2011 after complications during surgery.

Stuart's first introduction to radio was while attending secondary school in Hamilton, Victoria where he started an apprenticeship as an electrician and radio technician. He met George Chandler, then VK3AC, and helped build several shortwave receivers enabling him to listen to overseas broadcasts. Stuart himself credits time spent with Stan Zeunert VK3SZ, George Wells VK3TW and Mort Riley VK3TN in 1937-1938 as sparking his interest in obtaining an amateur licence

Stuart obtained his AOCP in 1947 and was on air in September of the same year. He describes his first home transmitter as a crystal controlled eight watt input home built five valve superhet. It was supplied from a 12 volt battery and a vibrator supply.

Stuart's interest in radio grew and, according to his daughter Maxine, it took precedence over everything. Homes were built on hill tops to provide better take-off and signal reception. At one house he built a wooden tower in the backyard and had the radio equipment on a table in the lounge room.

Stuart did some experimenting with 7193 tubes on two metres with a local amateur John Sheard VK5JA in 1949. 'It was quite a job to hand carry the batteries to the top of the hill. We were trying to get through to an amateur in the Melbourne area. Unfortunately we were about 10 MHz off frequency. Measurements were not very accurate in those days', John remembers.

Stuart VK5MS, on the left, and Erg VK5KU showing their 1954 RD contest trophy.

In 1949 Stuart used a 12 volt generator and a petrol engine to power his radio equipment for about a year until 240VAC power was available. At this time antennas were mostly dipoles and in 1950 he built his first 20 metre three element beam supported by a wooden tower.

Stuart was a keen contester, and one of his documented results was in the 1954 RD contest. This coincided with the Mount Gambier City celebration. Stuart as VK5MS won the telephony section, with Erg Von Stanke VK5KU winning the telegraphy section of the contest.

During the late 1950s, after work he would come home and fire up the shack. Some afternoons a number of high school kids would join him to watch him 'work the world'. Many of these kids went on to obtain their amateur licence and become founding members of the South East Radio Group.

Trevor Niven VK5NC was one of those students and recalls visiting Stuart's shack after school and watching the intensity of glow of the tubes varying with the modulation of the transmission. 'I knew from that moment that one day I would be an amateur radio operator. I was totally inspired', Trevor recalls.

In 1963 Stuart was the first VK to confirm 300 countries on AM phone and in November of 1966 he was made a member of the ARRL Honour Roll with 330 countries. By June 1991 Stuart had confirmed 323/373 countries and reportedly had more deleted countries than any other VK amateur.

In retirement he built separate linear amplifiers for each band, 160 m, 80 m, 40 m, 20 m, 15 m and 10 m. His station consisted of a Drake transmitter, separate receiver, amplifier and five element yagis at 30 metres for each band.

As part of an article for the Federal Awards Manager in 2002 Stuart wrote this paragraph-'I would like to suggest to those who wish to achieve a high standard in the DX field to set a goal. Don't be in too much of a hurry. Spend a lot of time listening. Build what equipment you can and double the satisfaction of achieving. Try working often in contests to obtain operating skills. Make sure you have good reliable equipment and antenna system. Remember your family responsibilities and keep within your finances'.

Stuart's epitaph is probably just as valid now as it would have been during is amateur life- 'VK5MS – DXing from Down Under'.

This memorial notice was submitted by the South East radio Group (SERG), and information was obtained from his eulogy by daughter Maxine Shephard, and an article penned by Stuart in 2002 for the Federal Awards Manager (although it is unsure if it was ever published). The photo and comments were from Trevor Niven VK5NC, David Stacpoole VK5ZOO and John Sheard VK5JA.

VK6news

John Ferrington VK6HZ

G'day from WA! Its busy times here in VK6! Not only do we have a mining boom but some of our Perth clubs are experiencing growth!

Hello. This is Bill VK6WJ with news from HARG - The Hills Amateur Radio Group.

At our last social meeting on 9 June, Ray VK6ZRW brought along some very sophisticated test gear for checking the calibration of members' transceivers and SWR meters. Quite a few members brought transceivers and meters along and now know how good or bad they are. Thanks Ray for a very interesting session.

At our meeting on 30 June we asked members to suggest the activities, talks and equipment they would like to have at the club during the next twelve months. We are now organising talks on magnetic loops, D-STAR, Jamboree On The Air, APRS, radio astronomy, the SKA, EchoLink and IRLP, satellite and ISS communication and ATV. Other activities planned are to participate in Jamboree on the Air, the RD and John Moyle contests and National Field Day. We are also arranging a visit to a nearby TV transmitter and a fox hunt at a local park.

At this meeting we welcomed back two new members, Jon Guy VK6MAD and Steve Hyland VK6ST. That's seven new members in two months! The club is definitely going from strength to strength.

Our Annual General Meeting and election of office bearers for the next year is on Saturday, 28 July, and as this article is being written on 30 June I will have to let you know the results in the September edition of *Amateur Radio* magazine.

We now have a midday sausage sizzle before every meeting and meetings then start at 2.00 pm. Social meetings on the second Saturday of the month and General meetings on the last Saturday.

Photo 1: The test set up of Ray VK6ZRW, for frequency, power and SWR.

For more information go to *www.harg.org.au* 73 until next time from Bill VK6WJ.

Now over to the NCRG crew for an update.

Hello again from NCRG. We recently were lucky enough to obtain the mast and antennas from the estate of the late Don Graham VK6HK. This setup was, as readers would expect, designed and built by Don with his usual attention to detail and unquestioned technical skills.

The mast consisted of two, 10 metre crank-up sections with a very nice tilt over base. When fully extended the antennas mounted on top were at a height exceeding 18 metres and the tilt over system was built in such a way that Don, and his wife Pat, could easily lay the structure over in their garden to enable work to be done on the antennas.

Antennas were a HF tri-band three element Yagi, multi element six metre, two metre and 70 cm Yagis and a four band dish for Don's No.1 love, microwaves.

Several members gathered at Don's home on a recent Saturday morning and under the direction of Don's long-time friend Wally VK6KZ helped with the disassembly and removal of the installation and with some quick modification of his boat trailer, Brian VK6FONC was able to transport the parts to Whiteman Park.

Thanks to all those who assisted and especially Don's XYL Pat, and Wally VK6KZ, and thanks Wally for the photos. Readers can see more photos and a short video by visiting the NCRG web site *http://ncrg.info/2012/06/28/removal-of-dons-tower/*

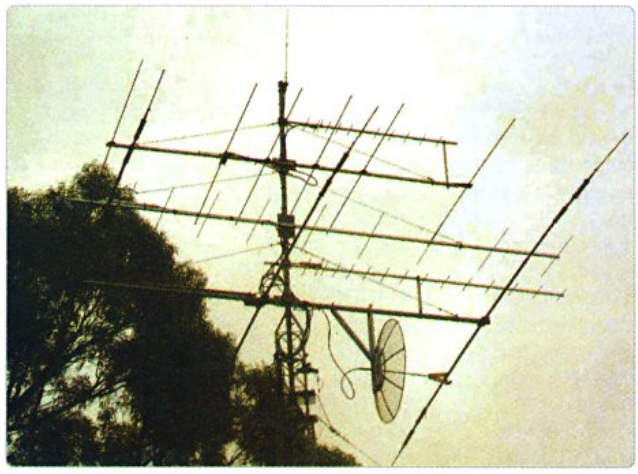


Photo 2: The VK6HK tower, the subject of the NCRG re-location effort.

This tower and associated VHF and UHF Yagis are

destined to be erected in the now vacant site where the old windmill tower stood; we also have plans to mount a dual band 18 and 24MHz beam to give access to those bands.

Arthur VK6CY is busy again in the early planning stage of a four square phased vertical array for 80 metres; this will be four verticals with elevated feed and radials and associated phasing sections to allow switching to any of four directions. The site has been pegged out and the excavation for the footings where the verticals will stand is due to start.

Readers may recall Arthur's last project, a flat top 80 metre dipole at 18 metres with Delta match feed and a 150 metre long open wire feed line. This antenna needed to be located some distance away from the club rooms, hence the low loss feeder and is used for the 80 metre news broadcast from the NCRG.

There is also a long term plan for a complete rebuild of our 160 metre antenna, most likely a dual 'V' beam arrangement with its tower shifted to accommodate the extended layout. We are fortunate to have Arthur's experience with large wire array antennas and the 'real estate' to deploy these monsters.

In recent times our antenna farm has undergone substantial re-arrangement under the guidance of Andrew VK6IA, Keith VK6RK and Steve VK6IR. It was found that a significant improvement to co-station interference when operating in Multi 2 contests or when both stations were in use at the same time could be had by re-siting some antennas while raising or lowering others and with the erection of our 'G' tower on which the three element Hy-Gain 40 metre beam has been installed and the planned re-siting of the TET Emtron 20 metre monobander, this phase of work is well underway.

Keith VK6RK has been busy in the background working on the VK6RIO beacon project. Readers will recall that we had a WIA Grant some years ago to help with the cost of this project and although this is a long term project, work is proceeding. Aside from the technical aspects, it involves liaising with like minded enthusiasts on both Reunion Island and in South Africa.

Here is an update on the VK6RIO two metre chirp beacon project that Keith sent me for inclusion in this article:

1. Antennas. The four beams are now completed and ready for testing. A combiner was purchased at Friedrichshafen last weekend to speed up the process. Coax matching leads need to be constructed and the individual antennas tested before fitting to the H frame and installing on the mast.
2. The Tentec 6n2 transceiver has been modified by Phil VK6APH with the GPS locking, the amplifier modifications and the associated work on the equipment now complete.
3. The software has been written and the hardware tested for the Perth end of the project.
4. Reunion Island have a few problems at present due to a lack of funds to buy some of the necessary components for the SDR hardware; any financial donations will be gratefully received! We are working on this.
5. I met Phil's Norwegian compatriot in crime LA2NI at Friedrichshafen and was brought up to date on the hardware side of the SDR project.
6. Reunion is the first target area. If that is successful then we can concentrate on reaching ZS.
7. As the radio is both a two metre and six metre transceiver the option for a future modification to provide a six metre chirp beacon piggybacked on the same system is still open, subject to funding etc.
   So that is the latest on the NCRG VK6RIO beacon project. More to follow as it progresses.

Thanks Keith.

Another long term member, Ian VK6ZIC has spent a lot of time of late cleaning out one of the sheds on our site; he has also built some nice steel shelving to store field day equipment and so on, but the primary use for this is to establish our very own "Men's Shed". Lighting and power outlets have been installed and this will give members a place to do work on their own or club projects with the help and advice from the rather diverse membership.

Well folks, that's a wrap for this month. Why not visit us, the Sunday morning sausage sizzle is a good time to call, all welcome. All the best and 73 from NCRG. Wayne VK6EH.

Thanks all for the input. If anyone is interested in getting a two metre repeater up and running in the Port Hedland area, can you please contact me. If you have anything for the VK6 Notes column, please email me *john.ferrington@gmail.com*

Photo 3: The NCRG guys involved in the VK6HK tower and antenna re-location.

VK3 news Amateur Radio Victoria

Barry Robinson VK3PV
e *arv@amateurradio.com.au*
w *www.amateurradio.com.au*

Amateur Radio Victoria will activate VK3WI for the ILLW

It is only a few weeks to the annual International Lighthouse/Lightship Weekend. Lighthouses from all over the world will be participating. This year the event will be held on the 18th and 19th of August 2012 starting at 0001 UTC on Saturday and finishing at 2400 UTC on Sunday.

Amateurs activate a lighthouse/lightship by setting up an amateur station in, at or adjacent to the lighthouse/lightship and the aim is to contact as many lighthouses/lightships as they can. It also gives other amateurs the opportunity to contact the lighthouses as well. Permission to set up an amateur station at a lighthouse/lightship must be obtained from the owner or controlling body first. So far, over 230 lighthouses have already registered and will be active over the weekend.

The event is not a contest and its basic objective is to promote public awareness of lighthouses/lightships and their need for preservation and restoration, to promote amateur radio and to foster International goodwill. Amateur Radio Victoria will be participating, as it has done each year since 2005, by activating the Time Ball Tower at Point Gellibrand in Williamstown using the callsign VK3WI. Point Gellibrand is located in the Hobsons Bay council area, so if you are chasing the Victorian Local Government Award, give VK3WI a call.

Guidelines, participant list and operating times can be found on the web site *http://illw.net/* Be part of the fun and join us on the air. Amateur Radio Victoria members are welcome to come and assist in the operation of the station.

Bogong High Plains trek

The annual Bogong High Plains trek this month will use solar powered QRP gear on HF into the evening and two metre or 70 cm simplex and local repeaters at other times. Leading a team of cross-country skiers on the expedition are Stephen Warrillow VK3SN and Gerard Warrillow VK3GT, who will be operating during the trip. The skiers will be some 1,800 metres above sea level exploring the icy beauty of the Australian Alps in north-east Victoria where the snow is looking promising.

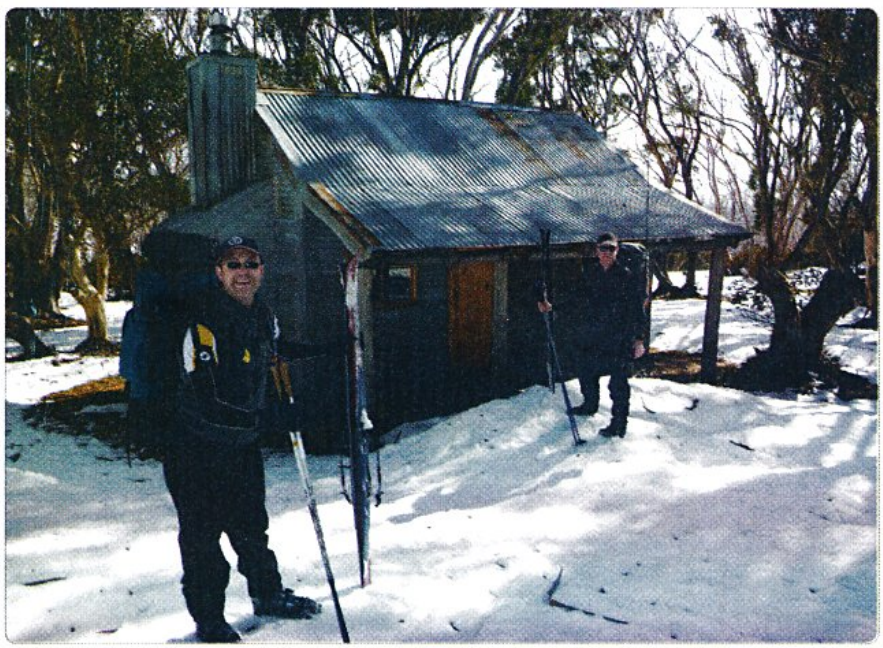
Stephen and Gerard mentored another brother about amateur radio during previous snow trips. He was inspired so much that he got his own ticket and Michael Warrillow VK3FMAW joins the trek with his own Foundation licence. The group has visited the area for a number of years. During their rest breaks they are settled in huts, caves and igloos. The ultra-light amateur radio gear is powered by solar panels and batteries fed into simple wire antennas, plus hand-held VHF/UHF transceivers.

Do listen for them calling CQ on the 40 metre and 80 metre bands well into the evening and at other times on the higher bands, for four days from 6th August.

ATV QSO Party, 24-26 August, 2012.

Peter Cossins VK3BFG is again organizing an amateur television QSL party, liaising with Don Hill KE6BXT for our link into the Southern Californian ATV network. Peter is also contacting the British Amateur TV Club to see if we can get some 'G' calls involved.

This will involve the Melbourne VK3RTV repeater on Mt Dandenong



Stephen VK3SN and Michael VK3FMAW outside Roper's Hut during a snow trip.

VK3RSG	Bass Hill OK.
VK3RWZ	Mt William is suffering intermod and we are awaiting an isolator to be fitted.
VK3RWU	Mt William. Possibly hit by lightning. Awaiting repair.
VK3RMM	Mt Macedon two metres OK.
VK3RMM	Mt Macedon 70 cm. A new frequency 439.825 MHz with 91.5 Hz tone access.
VK3RPU	Arthur's Seat. A new frequency 439.850 MHz with 91.5 Hz tone access.
VK3RML	OK.
VK3RWM	Mt Arapiles. Currently de-sensing and awaiting solution from pager owners.
VK3RNU	Mt Stanley. Building works should commence shortly. Expected to be completed mid- year.
VK3RCV	Strong winds damaged the top co-linear antenna and riggers have replaced this antenna. Transmitter now has a 91.5 Hz tone on output.
VK3RBO	OK.
VK3RTV	OK.
VK3RMK	OK. Base station has been upgraded. Some pager interference.
VK3BWI	Broadcast now automated and the 8 pm service has resumed. The callback on Macedon after the morning broadcast has been reinstated. HF service should be reinstated mid-year. We apologise for teething problems with the broadcast upgrade and this has now been fixed.
VK3RMS	Olinda 6 metre – OK.
VK3RGL	Mt Anakie. VHF and UHF currently OK with no issues.
VK3RGC	Montpellier. VHF - some minor works to be done, change power supply and reprogram the repeater to reduce tail length.
VK3ROW	Beech Forest. Suffering de-sense from pager transmitter near-by.

Repeater update

along with Skype for the overseas contacts. Those that cannot receive VK3RTV can go to the BATC TV Digital Television website to view the event. For further information contact Peter Cossins at *pcossins@bigpond.com*

Repeater update

A list of current and planned repeater maintenance projects around the state being undertaken by Amateur Radio Victoria includes information shown in the table at left.

Please remember the bulk of repeater works is carried out by our dedicated volunteers who all have full time jobs and families, so please be patient.

Important notice to our members

When upgrading your callsign or email address please remember to advise ARV so we can keep your details current.

VK5news Adelaide Hills Amateur Radio Society

Christine Taylor VK5CTY

The AHARS meeting in June was a Show and Tell meeting. The range of articles made by or modified by members was most impressive. Norm VK5GI had made up a Bitex TRX kit for 80 metres. A number of the members had tried the same kits, so were interested in his finished product. Lyle VK5WL showed off an antenna that could be and is being used indoors, in a retirement village where visible antennas are not allowed. Wolf VK5HWL had made up a triode valve tester as such a device is no longer available, although there are amateurs who like to experiment with valve equipment. He has tested it on a wide range of valves among which were a number that recalled earlier days.

Graham VK5ZFZ had been experimenting with making his own inductors for an amplifier he is interested in, as he had been finding it difficult or expensive to access the right sized ones. Darryl VK5JDS had made up a QRP transmitter from scratch. While Rob VK5RG has two old Command receivers, one of which he had refurbished with valves and so on; with the other he had replaced all the high voltage components with solid state, low voltage ones. It demonstrated what could be done with old units.

Jim VK5TR showed us a voltage multiplier that does not use a stepper motor from a computer, as most of these devices do. Gerard VK5ZQV showed off a microwave demonstration that can be used to show the propagation and the properties of electromagnetic waves, particularly in bare copper wire. He also had many of the well-known names associated with the very early days of the discovery of electromagnetic waves. And some not so well-known ones as well. This being all part of some research he is doing, and was very interesting and informative. Eric VK5HSE had

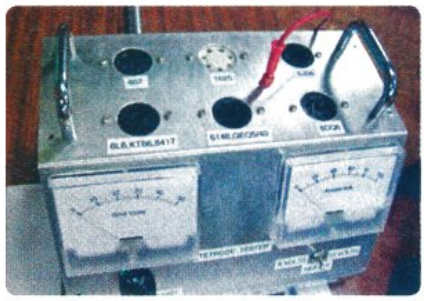


Photo 1: The valve tester built by Wolf VK5HWL.

an iambic keyer he had made. It was unusual in that it could be programmed to send a piece of text or read text sent to it, and showed the letters as they were sent, on an LED display.

Last but not least was a high voltage generator made by Barry VK5BW that is used in the starting procedure of one or more of the aircraft engines at the aviation museum. Those of us who have been to see an 'engine run' will be disappointed not to see Barry disappear in a cloud of smoke at the next 'engine run'. Much of the smoke came from the old, original magneto starting system.

Altogether it was a very interesting and informative evening.

Regular meetings are held on the third Thursday of the month at the Senior Citizens premises in Blackwood. For more information contact the President David VK5KC QTHR.

During the business meeting several important awards were shown or presented. David VK5KC, had been presented with the Higginbottom Award at the AGM in Mildura for his services to amateur radio over many years.

An award certificate was presented on the night to Jim VK5TR for the best technical article in *AR* during the year.

Kevin VK5AKZ was asked to show off the plaque he had been presented with in absentia to acknowledge his admittance to the QRP Hall of Fame. Unfortunately due to other commitments in Australia he was not able to go to Dallas for the actual induction.

The Club's congratulations were expressed to these people by all the members. It is a credit to the club to have members who earn such prestigious awards.

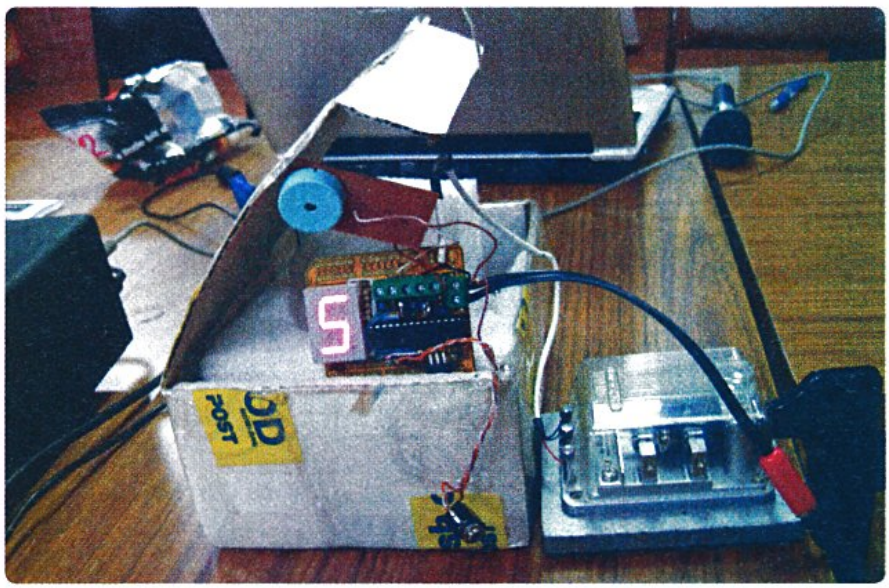


Photo 2: The iambic keyer built by Eric VK5HSE, in 'demonstration mode'.

Gridsquare Standings at 15 June 2012

Guy Fletcher VK2KU

144 MHz	Terrestrial	
VK2FLR	Mike	120
VK3NX	Charlie	107
VK2KU	Guy	102
VK3HZ	David	92
VK3PF	Peter	90
VK2ZT	Steve	86 SSB
VK5AKK	Phil	84 SSB
VK3PY	Chas	80 SSB
VK2ZAB	Gordon	78 SSB
VK2DVZ	Ross	77 SSB
VK3BDL	Mike	73 SSB
VK3BJM	Barry	70 SSB
VK2AMS	Mark	68 SSB
VK7MO	Rex	67
VK3II	Jim	66
VK3QM	David	66 SSB
VK2EI	Neil	65
VK2TK	John	62
VK3II	Jim	62 SSB
VK2MER	Kirk	61 SSB
VK3WRE	Ralph	60 SSB
VK4FNQ	John	59
VK4FNQ	John	58 SSB
VK3PF	Peter	56 SSB
VK3AKK	Ken	55 SSB
VK5BC/p	Brian	55 SSB
VK5BC	Brian	53 SSB
VK3KH	Michael	52 SSB
VK3ZLS	Les	51 SSB
VK4CDI	Phil	51
VK3HY	Gavin	49
VK4CDI	Phil	47 SSB
VK7MO	Rex	47 SSB
VK3VG	Trevor	46 SSB
VK7MO	Rex	46 Digi
VK4KZR	Rod	43
ZL3TY	Bob	42
VK4TJ	John	41 SSB
VK3EJ	Gordon	40 SSB
VK3PF	Peter	40 Digi
VK2TG	Bob	39 SSB
VK3UH	Ken	38
VK2TK	John	35 SSB
VK2KOL	Colin	34 SSB
VK3II	Jim	33 Digi
VK3ZUX	Denis	33 SSB
VK1DA/p	Andrew	31
VK3DXE	Alan	30
VK3DXE	Alan	30 SSB
VK1WJ	Waldis	29
VK4KSY	David	28 SSB
VK2TK	John	27 Digi
VK1WJ	Waldis	25 Digi
VK4CDI	Phil	25 Digi
VK3TLW	Mark	24 SSB
VK4EME	Allan	23
VK3ALB/p	GARC Team	22 SSB
VK3BG	Ed	22 SSB
VK3KH	Michael	21 Digi
VK3ECH	Rob	20 SSB
VK6KZ	Wally	20
VK2ZT	Steve	19 Digi
VK4EME	Allan	19 SSB
VK3AL	Alan	18 SSB
VK6KZ/p	Wally	16
ZL3TY	Bob	15 Digi
VK5APN	Wayne	13
VK2DVZ	Ross	12 Digi
VK2EI	Neil	12 Digi
VK4EME	Allan	12 Digi
VK2AMS	Mark	10 Digi
VK2KOL	Colin	9 Digi
VK4AE	Denis	9 SSB
VK1WJ	Waldis	7 SSB
VK5APN	Wayne	7 Digi
VK5APN	Wayne	7 SSB
ZL3TY	Bob	7 CW
VK1WJ	Waldis	5 CW
VK4KSY	David	5 Digi
VK4JAZ	Grant	4 FM
VK2GG	Dan	3
VK3DXE	Alan	2 Digi
VK3DXE	Alan	2 CW
VK3QM	David	1 Digi
VK4FNQ	John	1 FM

144 MHz	EME	
VK2KU	Guy	472
VK2KU	Guy	458 Digi
ZL3TY	Bob	403
VK3AXH	Ian	343 Digi
VK4CDI	Phil	270 Digi
VK5APN	Wayne	245
VK5APN	Wayne	240 Digi
VK7MO	Rex	157 Digi
VK2FLR	Mike	120
VK2DVZ	Ross	119 Digi
VK3II	Jim	87 Digi
VK2AWD	David	82 Digi
VK3KH	Michael	50 Digi
VK2KU	Guy	44 CW
VK3DDU	Paul	39 Digi
VK2ZT	Steve	28 Digi
VK3HZ	David	19
VK5APN	Wayne	17 CW
VK3DXE	Alan	15 Digi
VK3NX	Charlie	5 CW
VK4EME	Allan	5 Digi
VK3AXH	Ian	3 CW
VK2DVZ	Ross	2 CW
VK3AXH	Ian	1 SSB
VK3BJM	Barry	1 Digi

432 MHz	Terrestrial	
VK2ZAB	Gordon	57 SSB
VK3PY	Chas	51 SSB
VK3NX	Charlie	50 SSB
VK3QM	David	50 SSB
VK3HZ	David	42
VK3ZLS	Les	40 SSB
VK3BJM	Barry	39 SSB
VK5AKK	Phil	39 SSB
VK2KU	Guy	38
VK2DVZ	Ross	35 SSB
VK2ZT	Steve	35 SSB
VK3BDL	Mike	35 SSB
VK3WRE	Ralph	33 SSB
VK3PF	Peter	32
VK3PF	Peter	30 SSB
VK3AKK	Ken	26 SSB
VK5BC	Brian	26 SSB
VK1DA/p	Andrew	24
VK2MER	Kirk	24 SSB
VK3KH	Michael	22 SSB
VK7MO	Rex	21
VK3VG	Trevor	20 SSB
VK5BC/p	Brian	20 SSB
VK2AMS	Mark	19 SSB
VK7MO	Rex	19 SSB
VK2TK	John	18
VK3ALB/p	GARC Team	18 SSB
VK2TK	John	17 SSB
VK3BG	Ed	15 SSB

VK3TLW	Mark	15 SSB
VK3ZUX	Denis	15 SSB
VK4CDI	Phil	15
VK4CDI	Phil	15 SSB
VK4KZR	Rod	15
VK6KZ	Wally	13
VK2EI	Neil	12 SSB
VK2KOL	Colin	12 SSB
VK2TG	Bob	11 SSB
VK4TJ	John	11 SSB
VK3AL	Alan	10 SSB
VK3ECH	Rob	10 SSB
VK4FNQ	John	10 SSB
VK3UH	Ken	8
VK6KZ/p	Wally	8
VK3KH	Michael	7 Digi
VK4AE	Denis	7 SSB
VK7MO	Rex	7 Digi
ZL3TY	Bob	7
VK4CDI	Phil	6 Digi
VK4EME	Allan	6 SSB
VK1WJ	Waldis	5 SSB
VK2DVZ	Ross	4 Digi
VK2ZT	Steve	4 Digi
VK3PF	Peter	4 Digi
VK3PY	Chas	4 Digi
VK3QM	David	4 Digi
VK2AMS	Mark	3 Digi
VK3DXE	Alan	3 SSB
VK4JAZ	Grant	3 FM
VK2GG	Dan	2
VK2KOL	Colin	1 Digi
VK2TK	John	1 Digi

432 MHz	EME	
VK4EME	Allan	62
VK4EME	Allan	57 Digi
VK4CDI	Phil	44
VK4CDI	Phil	43 Digi
VK7MO	Rex	10
VK4EME	Allan	9 CW
VK7MO	Rex	9 Digi
VK3NX	Charlie	5 CW
VK3AXH	Ian	4 Digi
VK3HZ	David	4
VK3KH	Michael	3 Digi
VK3NX	Charlie	3 Digi
VK2ZT	Steve	2 Digi
VK4CDI	Phil	1 CW
VK5BC	Brian	1
ZL3TY	Bob	1

1296 MHz	Terrestrial	
VK3PY	Chas	42 SSB
VK3QM	David	42 SSB
VK3NX	Charlie	40 SSB
VK2ZAB	Gordon	29 SSB
VK2DVZ	Ross	26 SSB
VK3ZLS	Les	26 SSB
VK5AKK	Phil	26 SSB
VK2KU	Guy	25
VK3BJM	Barry	22 SSB
VK3PF	Peter	22
VK3BDL	Mike	21 SSB
VK3WRE	Ralph	21 SSB
VK3PF	Peter	20 SSB
VK3HZ	David	19
VK3KWA	John	19
VK3KH	Michael	17 SSB
VK3ALB/p	GARC Team	16 SSB
VK3AKK	Ken	14 SSB
VK2ZT	Steve	13 SSB
VK3VG	Trevor	12 SSB
VK4KZR	Rod	12
VK7MO	Rex	12 SSB
VK3BG	Ed	11 SSB
VK5BC	Brian	11 SSB
VK1DA/p	Andrew	10
VK2TK	John	10 SSB
VK2AMS	Mark	9 SSB
VK5BC/p	Brian	9 SSB
VK3TLW	Mark	8 SSB
VK3AL	Alan	7 SSB
VK3UH	Ken	7
VK2MER	Kirk	6
VK3ECH	Rob	6 SSB
VK3ZUX	Denis	5 SSB
VK4CDI	Phil	5
VK4CDI	Phil	5 SSB
VK4TJ	John	5 SSB
VK6KZ/p	Wally	5
VK3KH	Michael	4 Digi
VK6KZ	Wally	4
VK4AE	Denis	3 SSB
VK4EME	Allan	3 SSB
VK7MO	Rex	3 Digi
VK2EI	Neil	2 SSB
VK2GG	Dan	2
VK2TG	Bob	2 SSB
VK3PF	Peter	2 Digi
VK3QM	David	2 Digi
VK4CDI	Phil	2 Digi
VK4FNQ	John	2 SSB
VK2DVZ	Ross	1 Digi
VK2ZT	Steve	1 Digi
ZL3TY	Bob	1 SSB

1296 MHz	EME	
VK4CDI	Phil	83
VK4CDI	Phil	69 Digi
VK3NX	Charlie	63 CW
VK7MO	Rex	41
VK7MO	Rex	36 Digi
VK4CDI	Phil	31 CW
VK2AMS	Mark	23 Digi
VK3AXH	Ian	14 Digi
VK2DVZ	Ross	11 Digi
VK4CDI	Phil	4 SSB
VK2AMS	Mark	1 SSB
VK2DVZ	Ross	1 SSB

2.4 GHz	Terrestrial	
VK3PY	Chas	24 SSB
VK3NX	Charlie	23 SSB
VK3QM	David	23 SSB
VK3AKK	Ken	21 SSB
VK3WRE	Ralph	12 SSB
VK3ALB/p	GARC Team	7 SSB
VK3BJM	Barry	7 SSB
VK3PF	Peter	7 SSB
VK3KH	Michael	6 SSB
VK3HZ	David	5
VK4KZR	Rod	4
VK6KZ	Wally	4
VK2EI	Neil	3 SSB
VK3KH	Michael	3 Digi
VK3ZUX	Denis	3 SSB
VK1DA/p	Andrew	2
VK2AMS	Mark	2 SSB
VK2GG	Dan	2
VK3PF	Peter	2 Digi
VK2DVZ	Ross	1 SSB
VK3BG	Ed	1 SSB
VK3TLW	Mark	1 SSB

2.4 GHz	EME	
VK3NX	Charlie	44 CW
VK7MO	Rex	14
VK7MO	Rex	10 Digi

3.4 GHz	Terrestrial	
VK3NX	Charlie	21 SSB
VK3QM	David	21 SSB
VK3PY	Chas	14 SSB
VK3AKK	Ken	13 SSB
VK3WRE	Ralph	8 SSB
VK3PF	Peter	6 SSB
VK6KZ	Wally	4
VK2AMS	Mark	2 SSB
VK2GG	Dan	2
VK2AMS	Mark	1 Digi
VK2EI	Neil	1 SSB
VK2EI	Neil	1 Digi

3.4 GHz	EME	
VK3NX	Charlie	20 CW

5.7 GHz	Terrestrial	
VK3NX	Charlie	21 SSB
VK3QM	David	19 SSB
VK3PY	Chas	17 SSB
VK3AKK	Ken	14 SSB
VK3WRE	Ralph	9 SSB
VK3PF	Peter	7 SSB
VK3ALB/p	GARC Team	6 SSB
VK6KZ	Wally	4
VK2GG	Dan	3
VK3BJM	Barry	2 SSB
VK3PF	Peter	2 Digi
VK6BHT	Neil	2 SSB
VK2AMS	Mark	1 SSB
VK2EI	Neil	1 SSB
VK3ZUX	Denis	1 SSB

5.7 GHz	EME	
VK3NX	Charlie	27 CW

10 GHz	EME	
VK3NX	Charlie	21 CW
VK7MO	Rex	1 Digi

10 GHz	Terrestrial	
VK3HZ	David	72
VK3HZ	David	30 SSB
VK3NX	Charlie	25 SSB
VK3PY	Chas	25 SSB
VK3QM	David	24 SSB
VK3AKK	Ken	23 SSB
VK3PF	Peter	13 SSB
VK3WRE	Ralph	12 SSB
VK6BHT	Neil	9 SSB
VK3ALB/p	GARC Team	7 SSB
VK2EI	Neil	6
VK7MO	Rex	6
VK6KZ	Wally	5
VK7MO	Rex	5 SSB
VK2AMS	Mark	3 SSB
VK2EI	Neil	3 Digi
VK2EM	Bruce	3 SSB
VK3KH	Michael	3 SSB
VK3KH	Michael	3 Digi
VK3TLW	Mark	3 SSB
VK2GG	Dan	2
VK3BJM	Barry	2 SSB
VK3UH	Ken	2
VK3ZUX	Denis	2 SSB
VK4KZR	Rod	2
VK1DA/p	Andrew	1
VK3BG	Ed	1 SSB
VK3NX	Charlie	1 Digi
VK7MO	Rex	1 Digi

Additions, updates and requests for the guidelines to Guy VK2KU.

The guidelines (and the latest League Table) are also available on the VK VHF DX Site at *http://vhfdx.radiocorner.net* - click on Gridsquares.

24 GHz	Terrestrial	
VK3AKK	Ken	5 SSB
VK3NX	Charlie	5 SSB
VK3QM	David	5 SSB
VK3HZ	David	3
VK6BHT	Neil	3 SSB
VK7MO	Rex	3 SSB
VK2EI	Neil	2 SSB
VK2GG	Dan	2
VK6KZ	Wally	2
VK3WRE	Ralph	1 SSB

47 GHz	Terrestrial	
VK3NX	Charlie	4 SSB
VK3QM	David	4 SSB
VK2GG	Dan	2

76 GHz	Terrestrial	
VK3KH	Michael	1 SSB

122 GHz	Terrestrial	
VK3KH	Michael	1 SSB

474 THz		
VK3WRE	Ralph	3 AM
VK3HZ	David	2
VK7MO	Rex	2
VK7MO	Rex	2 Digi
VK7TW	Justin	2
VK7TW	Justin	1 Digi

Next update of this table will close on or about 19 October 2012.

Stations who do not confirm their status for more than 12 months may be dropped from the table.

D-STAR QSO Party 2012

After the success of the D-STAR QSO party in 2011, **Icom** is proud to announce that it will be running it again in 2012.

This year, it will commence on the **21st of September at 0000 (UTC), and will finish on the 23rd of September at 2400 (UTC).**

Like last year, the goal will be to communicate with other D-STAR operators in as many different countries as possible.

More information, including prize details, will be available on the Icom Inc. website: **http://www.icom.co.jp/world** closer to the date.

DX- News & Views

John Bazley VK4OQ
e *john.bazley@bigpond.com*

There has been a lot written recently about the cost of some of the bigger DXpeditions and the various methods of collecting contributions. There is no doubt that the rare spots are becoming very costly to activate, stating the obvious, which is why they are rare!

Typical is the recently announced operation to **Heard Island** planned for 2014. This will be led by Dr. Bob Schmieder KK6EK, with co-organizers ON6TT, DL1MGB and N6MZ. The operation includes operators DJ9ZB, NP4IW, AD6E, N4GRN, DJ5IW, N6PSE, W3WL, W0GJ and AA7XT. Additional support personnel are W6OP, N7XG and KY6R. A Clipperton Island operation for March, 2013 is 'being designed as a test/development project for Heard Island'. Some of the ops will be part of both operations, which Bob is strongly encouraging. Additional operators are being sought. *www.cordell.org/CI* and *www.heardisland.org*

It is good to see another DXpedition to **St Pauls Island**, from July 26 to August 1. This on the 'most wanted list' for OC is rated at #18. Let us hope that this trip will take a standby occasionally for OC. The last operation, about five years ago, was usually found working Europe when the path was open to OC!

Now to other DX News.

A tantalizing note from Pierre Tromp ZS1HF/ZS8M! He sent a copy of the latest **Marion Island** newsletter to Daily DX with a short titbit about the proposed **ZS8** DXpedition. He says 'the South African Radio League will resume discussion in August' and 'We are busy formulating a discussion document'. No word on Rory Meyer ZS6RGV, the island deputy and radiotech, who has been on the island since April.

RI1FJ, **Franz Josef Land**, will be put on the air during the next two years when Eugeny Chepur UA4RX goes there. UA2FM is working on renewing the RI1FJ licence for Eugeny and will be sending a copy to the DXCC Desk when it comes through. UA4RX will likely arrive on the island in July when the ship MV Somov takes the Arctic Island crews from the embarkation point, Archangelsk, dropping them off at their destinations, and picking up the departing crews.

Eugeny plans to have his 200 watt IC-775DX2 along, and a three element SteppIR that is already installed at the base, put up by RI1FJA and RI1FJL. There is also a 500 watt amplifier and some wire antennas. Victor UA2FM is the RI1FJ QSL manager. Victor says Eugeny is a devoted CW operator and prefers that mode. He also 'likes some RTTY/PSK and sometimes [does] a bit of SSB'. QSL direct only to UA2FM, 'no bureau'. Do not send cards to Eugeny's home address 'as all QSL activity comes from Kaliningrad', says Victor. 'Japanese stations (as well as others) do not send IBRS please. This service is not recognized by the Russian Post'."

The RI1FJ 2010-2011 log was uploaded to LoTW a few weeks ago. Victor adds 'We will try to use HF nets to send logs and small messages. Hopefully I will upload his log onto LoTW more often'.

Mike FP/VE2XB will be QRV from *St. Pierre et Miquelon Islands*, IOTA NA- 032, from August 10-20. It will be all bands, emphasizing six metres. Mike will have his 500 watt THP amplifier 'so signals should be good with a Hexbeam'. QSL via the VE2XB info on QRZ.COM, *http://fp-ve2xb.jimdo.com/*

V31WH, V31MX and V31MO in **Belize** by W5HNS, K0BCN and W5MRM will be on Cay Caulker, NA-073, from July 23-31. They will be on 40-10 with a five band Hexbeam and 40 metre dipole, CW and SSB. They're still considering digital modes. They will have just one station operational and will be in the IOTA contest July 28-29 with the V31MX callsign, alternating between SSB and CW. QSL on LoTW or to their home calls.

Oleg UA1PBA/ZS1ANF is now working from the Bellinghausen Base on **King George Island**, AN-010, in the South Shetland Islands. Listen for either RI1ANF or ZS7ANF/A with an emphasis on the low bands, 1.8 through 7 MHz. QSL via ZS1ANF or RK1PWA.

Colin KH9/WA2YUN has recently been active again on 20 metres from **Wake Island**, says Luke VK3HJ. Colin has been checking into the ANZA DX Net, which meets daily on 14183 beginning at 0515Z.

Radio Amateurs of Canada (RAC) are anticipating 'a public consultation through the Canada Gazette' for VE amateur radio operators to gain authorization to use 5 MHz on 'a secondary basis' by the summer of 2012. RAC's goal 'is to ensure that Canadian amateurs have the 60 metre allocation available to all amateurs as part of their amateur radio certification, that is, without licence

applications, licence fees or special call signs'.

Ralph VK3FRNB is now on a volunteer assignment in Honiara, **Solomon Islands** for the next two years. He is currently able to operate on 20, 15 and 10 metres and soon hopes to be on 40 metres, as H44RK. As for QSLing, Ralph says 'At the moment only eQSL until I organize a mailing address and some QSL cards'.

Ralph HH2/9A7GAE is working at the Red Cross Mission in Leogane, **Haiti** for at least the next five months. He will be QRV on 80, 40, 20, 17, 10 and 6 metres on SSB and the digital modes, in his spare time. QSL via 9A7GAE and eventually LoTW.

Eric T6MO (K9GY) says 'It's official now' he will be in **Afghanistan** until April or May of next year.

Luigi OD5/IV3XNF will be on a UN Interim Force mission in **Lebanon** between May and October. He will be on a military base but plans to operate in his free time. He will have an FT-817ND (QRP) and wire antennas. He prefers CW/digital modes. QSL direct to home call. At the time of writing he has not been reported on the Cluster.

A combined Irish and Polish group plans an operation to **Little Saltee**, EU-103, for the RSGB IOTA contest, July 28-29. The ops are EI5JQ, EI7KD, SP9UUC, EI9KC, EI3JZ, EI6KD and SQ7NNM.

V47JA, **St. Kitts and Nevis**, is by W5JON, July 12-August 2. He will be at Calypso Bay on St. Kitts, planning to operate on 80-6 metres, including 60 metres, SSB. QSL via W5JON or LoTW. He plans to be active in the RSGB IOTA contest. W5HAM will also operate, using the V47HAM callsign, occasionally.

GB1HF is a special event station for the **2012 Olympic Games**, July 27- August 23. This operation is being run by the South Essex Amateur Radio Society. They plan to be on various bands and modes, with an apparent special emphasis on an operation from a cross-country cycling venue. *http://www.southessex-ars.co.uk/olympic2012.html*

Over the next year or so Ivor ZS1WY will be working in **Mozambique**. He works in the country for eight weeks then two weeks at home in South Africa. Currently Ivor has a 40 metre inverted vee on the roof and operates as C91IW. 'As soon as it gets warmer I will set up a field station for a weekend and see if 160 metres will work, I have a 1 kW linear and can obtain a generator but don't have an ATU up here' says Ivor. QSL via ZS1WY.

Andy AB7FS will be in Muri, Rarotonga, **South Cooks** from July 2 to August 25 and QRV in his spare time as E51AND.

The D64K team has announced the dates of their August DXpedition to the **Comoros Islands**. They will be in Ngazidja Island (aka Grande Comore Island) from August 8 to 20. More plans are expected to be announced in the coming days. As a reminder their website is *http://www.d64k.com/*

Josep EA3AKY has joined the D64K team, which plan to be QRV from the Comoros Islands and, despite it being a 'bad month for F2' he will be QRV on 50 MHz and will do his best 'to work as many as possible stations'. They will also be on six metres EME. 'UKSMG and InnovAntennas are looking to sponsor them with a seven element LFA Yagi' says Peter G3ZSS.

Ron DL4ME plans to be QRV as 5H3ME from **Tanzania** between August 14 and September 3. Activity will be on 3.5 through 50 MHz on CW and the digital modes. QSL via DL4ME.

SV5/I2RNJ and SV5/IK2IHY will be 'holiday style' from Rhodes, **Dodecanese Islands**, EU-001, August 4-11, HF SSB only. Roberto and Piero are equipped with an IC-706, 100 watts, to a multiband dipole. QSL through the bureau.

D2SG is back on the air from **Angola**. After an extended stay in Scotland, Craig MM3YNP (ex-MM0SSG) is back in Africa, probably for about a year. QSL via GM4FDM.

TA1HZ plans to be in Durres, **Albania** from August 1 to 7. He will be operating as ZA1TC, including the European HF Championship. QSL either direct to TCSWAT, POB 73 Karakoy, 34421 Istanbul, Turkey or via the Turkish QSL bureau.

Operator Juan Manuel is now active from the Argentine Marambio station LU4ZS located on **Seymour Island**, AN-013, in Antarctica. So far activity has been reported on 80 and 40 SSB. QSL via Henry LU4DXU.

To celebrate the 500th anniversary of the birth of Gerhard Mercator, the cartographer named for the Mercator projection world map, special event station **ON500MERCATOR** will be QRV until the end of this year. QSL via ON7KO.

Phil F4EGS is back again in **Chad** and plans to be there for the next two months and QRV as TT8PK. Listen for activity on CW, SSB and possibly RTTY on 7 through 28 MHz. He is now using a Flex 3000 running 100 watts and two verticals. QSL via F4EGS with complete details on QRZ.COM

Finally, as this will be my last issue of DX News & Views, I would like to thank all the many people who have over the past seven years sent me news and photographs. All were very much appreciated.

Good luck in the pileups and good DXing.

Special thanks to the authors of *The Daily DX (W3UR), 425 DX News (I1JQJ)* and *QRZ.DX* for information appearing in this month's DX News & Views. For interested readers you can obtain from W3UR a free two-week trial of *The Daily DX* from *www.dailydx.com/trial.htm*

Contests

Phil Smeaton VK4BAA
e *vk4baa@wia.org.au*

Welcome to this month's Contest column.

A few results and claimed scores to kick-off with this month.

2012 ARRL International DX CW contest scores

The results for the CW leg of the ARRL DX contest are out. The VK logs are shown in Table 1. Well done to all participants for putting VK on the contesting map once again!

CQ WPX CW 2012 claimed scores

The claimed scores for the 2012 CQ WPX CW contest are now available for all to see. VK logs featured in the listing are shown on Table 2.

Looks like another fiercely contested battle for WRTC points between Vlad and John.

Getting Started on EME

Some constructive criticism of this column could be levelled at the proliferation of HF results featured from month to month. Other areas and bands of interest are featured elsewhere in this magazine, but contesting on a world-wide basis does take place above 28 MHz.

EME (Earth Moon Earth, aka Moonbounce) has been described as 'the ultimate long path DX'. It is an exciting mode and allows you to literally work the world on VHF and UHF. It is not as difficult as you may think. Here is a brief overview on how to get started on this mode and possibly enter the world of EME contesting from VK.

Not too long ago, EME may have been beyond the reach of many hams. This is not necessarily the case any longer. There are plenty of active stations working EME on all bands from 50 MHz to 10 GHz all around the planet. It really does not take a lot to get started. For example, a number of stations have worked around the world on two metre EME with a single Yagi, a brick amp putting out less than 200 watts, and a good preamp. With a single Yagi system and high power, it is possible to work a lot more, but do not let tales of huge antenna systems and large amplifiers put you off. Digital modes also allow smaller stations to get on to EME with superb results.

The following discussion has a bias toward two metres, but other bands are similar, although having their own requirements for equipment, slight variations in conditions, operating techniques, and so on.

Contest Calendar for August 2012 – October 2012

August	4	TARA Grid Dip	PSK/RTTY
	4	Waitakere (NZART) Sprint	CW
	4/5	10-10 International QSO Party	SSB
	11/12	Worked All Europe	CW
	11/12	**Remembrance Day Contest**	**CW/SSB/FM**
	25/26	**ALARA Contest**	**CW/SSB**
September	**1/2**	**All Asian DX Contest**	**SSB**
	1/2	Region 1 Field Day	SSB
	8/9	Worked All Europe DX Contest	SSB
	29/30	CQWW RTTY DX Contest	RTTY
October	**6/7**	**Oceania DX Contest**	**SSB**
	13/14	**Oceania DX Contest**	**CW**
	20/21	Worked All Germany Contest	CW/SSB
	24/25	CQWW DX Contest	SSB
	24/25	ARRL International EME Competition	CW/SSB
	24/25	CQWW SWL Challenge	SSB

Note: Always check contest dates prior to the contest as they are often subject to change.

#	Call	Score	QSOs	Mult	Class	Power	1-Band	DXCC Entity
1	VK2IM	1,059,000	1,787	200	S	C		VK
2	VK7GN	184,842	501	126	S	C		VK
3	VK4IU	89,040	281	112	S	C		VK
4	VK3FM	22,713	115	67	S	B		VK
5	VK3TDX	22,644	111	68	S	C		VK
6	VK6HG	10,476	100	36	S		40	VK
7	VK8AV	5,628	67	28	S		40	VK
8	VK4IMX	1,173	23	17	S		40	VK

Table 1

Single Op High Power		**Single Op Low Power**	
VK4CT	8,353,800 (VK4EMM)	VK3FM	161,655
VK2IM	5,882,880	VK4TT	105,168
VK6DXI	4,946,055		
VK3TDX	2,688,196		
Assisted Low Power 15 m		**Multi Op Single Transmitter**	
VK4FJ	100,536	VK9PN	3,467,520

Table 2

What do I need?

To participate in EME, you will need an antenna with a reasonable amount of gain, at least 150 watts, and a good low noise preamplifier. Of course, more is better – more output power and a larger antenna will net more fish. You do not have to elevate the antenna to get started in EME. Many contacts can be found at moonrise and moonset with the antenna aimed at the horizon. It helps to have the preamplifier mounted at or near the antenna to minimise losses, but is not absolutely necessary. With modern GaAsFET devices, really good preamplifiers are easily available on the market if you don't fancy warming up the soldering iron.

Using the best feedline that you can get your hands on is only common sense, but using a high quality low loss feedline is essential so as to not lose weak signals within the noise. Don't cut corners with the antenna. Take the time to get all the elements perfectly aligned, and if you are fortunate to have stacked or bayed antennas, get all the booms lined up properly too. EME is very weak signal work and little things can make a profound difference to the end result. If you are choosing an antenna or building an array for EME, give some thought to the pattern as well as the gain. Side and rear lobes often pick up noise and this can seriously detract from your ability to hear weak signals off the moon.

Filtering is an area that is best left to the individual. Some people listen with an SSB bandwidth filter and do very well. Others like to have a narrow IF filter and/or outboard AF filtering. DSP filters are also common and some swear by them. SDR might also lend a helping hand, but the bottom line with filtering is *experiment*. Find what works for you.

The nature of EME

EME signals fade in and out for a number of reasons. Sometimes you hear nothing for long periods of time, other times you will be amazed what you can hear. Don't become discouraged if it takes several attempts to hear your first signals, make your first contact, or to work a particular station.

The polarization of EME signals is constantly changing. Except for a few stations who can rotate or electrically switch the polarization of their antennas, this causes very deep QSB that can last from several minutes to several hours or even days. There is also such a thing as true one-way propagation on EME, largely due to polarization shifting, so do not become discouraged if you experience this. Just keep trying.

The moon follows many cycles and the distance between the Earth and the moon is not constant. It varies, and generally there will be a *perigee* (moon closest to Earth) and an *apogee* (moon furthest from Earth) each month. Path loss to the moon and back is roughly 2 dB less at perigee than at apogee. This can make a very noticeable difference for small stations. Also, the sky behind the moon can be very noisy at certain times. All planets and stars emit noise across the radio spectrum, and most EME systems are sensitive enough to hear this noise. *Sky noise* is generally at its worst when the moon is crossing the galactic plane (moon appears in the Milky Way), which occurs twice each month. Practically all software intended for EME use includes this data. On two metres, sky noise varies between a low of about 175 degrees Kelvin (rare) to over 3000 degrees Kelvin. The lower the better, and if it is much over 400 the smaller stations can run into trouble.

Signals also tend to exhibit a rapid, almost fluttery fading known as *libration fading*. This is caused by the irregular surface of the moon, which 'rocks back and forth' slightly as viewed from Earth. Libration can cause signals to go both above and below the average level. Libration peaks, which can last up to a couple of seconds at two metres, can actually help the small station make contacts they would not be able to otherwise. A bit like meteor pings in their nature.

Another phenomenon not specifically relating to the moon which should be mentioned is *ground gain*. Simply put, reflections from the ground in front of an antenna cause peaks and nulls at certain elevation angles when the antenna is pointed at the horizon. The peaks can theoretically be six dB over the gain of the antenna alone over perfectly conducting, flat ground. In practice, it is somewhat less than that but can still make the difference between working a station and not working a station. How high you can work the moon without elevating the antenna and at what elevation angle the peaks occur, depends on several factors, including the height of the antenna. Generally, 15 degrees or so is the upper limit and it may be much lower in some cases. Ground gain does not work as well with really high antennas as it does with lower ones.

Because the moon moves in relation to Earth, there is a slight *Doppler shift* on EME signals. At moon rise, a two metre EME signal may be shifted up in frequency by as much as 350 Hz. The Doppler slowly comes down, reaching zero when the moon is passing your longitude (due south or due north azimuth heading), then starts to shift in a negative direction, going as much as 350 Hz down by moonset. Always tune slightly with the RIT when looking for a station on random.

Because the round trip distance is nearly half a million miles, it takes over two seconds for a signal to travel from Earth to the moon and back to Earth again. Well-equipped stations can actually hear their own signals echoed back from the moon when conditions are favourable.

EME operating techniques

EME is weak signal work and almost all contacts are made with CW.

Some of the well-equipped stations occasionally try SSB just for fun, but it's the exception not the rule. As for CW speed, most operators are comfortable somewhere between 10 to 20 wpm. Fast CW tends to be difficult to copy when signals are very weak, and too slow CW gets chopped up by libration fading, so there has to be a compromise somewhere between the two extremes. Good clean sending is an advantage, and many operators recommend increasing the length of the 'dits' (increase the weight) slightly to make them stand out more. A 'dit' length of 1.2 times normal seems to work well for most operators, but you'll find you own way. Computer generated CW can aid in the process also.

Random operation (calling CQ or answering CQs) is common, but for very small stations better success will be had on prearranged schedules. Schedules are generally run for 30 minutes, but may vary. Random operation is often at the low end of the band, with scheduled QSOs taking place slightly higher in the band.

Because signals are weak and not always out of the noise, almost all contacts are made with accurately timed transmit and receive sequencing. One minute sequencing is common on random, and two minutes is the norm for skeds (on two metres), although some operators prefer two minutes on random as well.

Setting your frequency correctly is very important. For schedules, set your transmit frequency to the prearranged schedule frequency and then do not move it. Let your schedule partner find you. During receive you should be tuning +/- 500 Hz or so with your RIT, second VFO, or whatever means you have available. What to do if you find your schedule partner more than a few hundred Hz off frequency is a dilemma. It is best not to move early in the schedule, as he may have already located your signal. Sometimes it is worth moving late in a schedule if you are not receiving reports from the other station but this is a risky move. If calling a station on random, try to set your transmit frequency so that you hear your echoes on top of his echoes. This is easy if you can hear your own echoes. If not, do the best you can by looking at the calculated Doppler shift of your own echoes and setting your transmit frequency accordingly.

Some time ago the so-called TMOR signal reporting system was used on EME. T meant traces of signal heard, M partial calls, O full calls, and R full calls plus report had been copied. These days the T and M are seldom used as most operators wait until they have copied complete calls before sending any report at all. For a valid contact, complete calls, signal report and acknowledgement must be received by both stations.

When and where to listen

If you want to try listening for EME signals, you really should get a moon tracking program that helps you identify the best times, or check into the EME Net for advice on when to listen or to make a sked with a big station. If you can elevate the antennas, try listening when the moon is visible in wherever your target area is and the sky temperature is below 400 degrees K, and preferably when the moon is near perigee. All of this information is given by the various moon tracking programs.

Moonbouncers are often also contesters

Most likely the majority of readers of this column will tend to define VK contesting as generally confined to HF bands, with a few contests set up for VHF and above. I tend to have a broader view on contesting and would claim that moonbouncers are often also contesters. Far more technically advanced than most appliance operators (especially me), they are patient and systematic, thorough in assembling their intricate stations, adjusting and refining noise figures, tracking the Moon, sometimes spending hours for one QSO. Homebrewing is the name of the game, experimenting, learning, exchanging information and experience.

Nowadays, top moonbouncers make hundreds of contacts during a contest weekend and the number of stations with EME (Earth-Moon-Earth) capability is growing rapidly. Many moonbouncers have been and still are ardent HF contesters. EME is often considered to be more challenging as it demands experience, a good understanding of the theory of antennas, and a hint of astronomy.

QSO rates are not high by HF-contesting standards but one has to have good ears to dig the weak signals out of the sea of noise. The upside is that the distances are much, much greater than in any HF contest. An average EME QSO spans 800,000 km. I wonder if the WIA will introduce points per kilometre.

Well, that was a short overview of EME, drawn from personal experience and a bit of trawling through the net to fill in my many gaps.

Ed.: Another possible operation mode for EME is to use one of the JT65 modes from the WSJT suite. But that is another story, and some traditional EME operators may contend that such contacts may not be valid in their eyes. Readers should note that the WSJT modes do allow for smaller stations to have contacts via the moon.

If you have any contest related material for inclusion within the column, topics that you would like covered or even some experiences and pictures you would like to share, then please feel free to get in touch via *vk4baa@wia.org.au*

See you on the bands. 73.

Harry Angel Memorial Sprint - Results 2012

Dr. Kevin Johnston VK4UH - Contest Manager Harry Angel Memorial Sprint

A grand total of 46 entries were received, with points claimed ranging from two to 62. Thirty six entries (78%) were in the PHONE section, two entries (4%) were in the MIXED section and eight entries (18%) were in the CW section.

Entries by State

VK1 - 0 (0%); VK2 – 4 (2%); VK3 - 6 (3%); VK4 - 30 (65%); VK5 - 2 (5%); VK6 - 1 (2%); VK7 - 3 (7%); VK8 – 0 (0%); ZL/other -0 (0%). A few states somewhat 'under-represented' perhaps?

Three log entries were received by post, the remaining majority were received electronically. One handwritten log was gratefully received! It was particularly gratifying to receive logs from three Foundation licensees; well done to VK3FJEN, VK4FDHS and VK4FAAD.

The high level of participation this year, including on CW, has guaranteed the survival of this iconic Australian sprint contest for the future. Thanks to all who came on air and operated and particular thanks to all who entered and submitted logs even where only a few contacts were made. Mark the date in your calendar for 2013!

Phone Section			
Callsign	**Points**	**Position**	**Certificate**
VK4YZ	62	1st	@
VK3SSB	61	2nd	@
VK4QH	60	3rd	@
VK4VDX	53	4th	
VK3PDG	46	5th	
Mixed Section			
Callsign	**Points**	**Position**	**Certificate**
VK4WM	42	1st	@
VK4NP	41	2nd	@
CW Section			
Callsign	**Points**	**Position**	**Certificate**
VK4XY	28	1st	@
VK4SN	26	2nd	@
VK2IG	24	3rd	@
VK3HY	22	4th	
VK3TX	22	4th	

Remembrance Day Contest

Alan Shannon VK4SN

Hi, I'm Alan, your newly appointed Remembrance Day contest manager.

I was nominated to the WIA board by our outgoing contest manager, Peter Harding, and had several supporters who were aware of my background. I grew up with amateur radio around me as my Grandfather was a keen ham from the halcyon days. I am ex RAAF signals and have been licenced since 1984. Contesting is one of my passions of the hobby, gaining over 45 placings in the last ten years and I always participate in VK contests when I can.

The new rules have been a combination of suggestions from me, other clubs, full time and part time contesters - and you. It has been this feedback over the last month that has shaped the rules as they now exist.

The rules are simplified and will make it easier for the casual contester to enjoy the weekend.

In brief, the changes to the rules were as follows.

1. Bring forward the start and finish times
2. Move the repeat contacts time from 2 to 3 hours
3. Working your own state is now allowed
4. Amalgamate all the phone modes into one
5. Amalgamate all bands
6. Allow only ONE callsign per operator for the contest period.
7. Introduce Teams
8. A new exchange is introduced
9. QRP section introduced.
10. Andrew VK1DA put forward a more even scoring formula which is now included for working out the state scores.

The proposed changes saw many emails change hands, but in general it was agreed that the RD Contest needed an overhaul and most of the changes were good. Hottest topics were the number exchange, how the teams work, and combining all phone modes into a singular phone category.

The number exchange method had several very strong supporters for either a non-sequential or serial number, but neither side had more supporters than the other.

Almost everyone was in favour of bringing forward the start and finish times to allow those who went portable to get home by night. Only two responses against this were received as one's wife wanted to go shopping and the other couldn't get out of bed in time.

The amalgamation of the bands and the phone modes will most certainly have a significant impact on the final score. One's approach to the contest will need careful consideration if you plan to be amongst winners. HF diehards will have to visit VHF/UHF and vice-versa. It will be good strategy to change bands as the 3 hours repeat contact time is an hour more than previous years. The 3 hour repeat time now falls in line with other VK contests.

A proposal to change to a non-sequential exchange numbering system was accepted as it was noted that operators who joined in later in the contest felt at a disadvantage and sometimes embarrassment when giving out small numbers and receiving huge ones in return. This is by no means a new idea, as some of the world's number one contests use a non-sequential number exchange.

Teams are not a new concept, but are a hot topic on whether it should have been included in the new rules or not. I like to think of the 'teams' as your platoon or similar, working alongside your mates. It is intended to enhance camaraderie and, as no one likes letting the team down, performance is better and longer time is spent on air. Please read the Team scenarios in the rules for a full explanation. Team scores do not affect the state score.

I am sure that we have reached the happy medium with the majority of people being happy with the new changes. My sincere thanks to everyone who submitted feedback to assist in the overhaul and simplification of the Remembrance Day Contest.

Alan VK4SN

The new rules are as follows:

1. Contest introduction

This contest commemorates the Amateurs who died during World War II and is designed to encourage friendly participation and help improve the operating skills of participants. It is held on the weekend closest to the 15th August, the date on which hostilities ceased in the southwest Pacific area.

It is preceded by a short opening address by a Guest Speaker transmitted on various WIA frequencies during the few minutes prior to the contest. During this ceremony, a roll call of amateurs who paid the supreme sacrifice during WWII is read.

The perpetual trophy is ordinarily held by the WIA at its national office and is inscribed annually with the name of the winning State or Territory.

2. Objective

Amateurs in VK, ZL and P2 will endeavour to contact other amateurs in VK, ZL and P2.

- VK, ZL, and P2 mean any station operating within Australia, New Zealand or Papua New Guinea and their external territories.

- Points are only awarded for valid contacts between VK, ZL and P2 stations.

3. Contest date & time

Sat 11th August 2012, 0300 UTC to 0259 UTC Sun 12th August 2012.

As a mark of respect, stations are asked to observe 15 minutes silence prior to the start of the contest, during which the opening ceremony will be broadcast.

4. Categories

1. Single Operator
2. Single Operator - QRP
3. Multi-Operator – Single Transmitter (Multi-Single)
4. Multi-Operator – Unlimited (Multi-Multi)

5. Sub-Category modes for single operators

1. Phone (AM, FM & SSB)
2. CW (CW & RTTY)
3. Mixed

6. Permitted bands

1. Contacts may be made on MF (160 m), HF and VHF & above bands except for WARC bands (10, 18 & 24 MHZ) which are excluded by IARU agreement from all contest operations.

7. Multi-operator Stations

1. Multi-operator single transmitter stations
   a. Are only allowed one transmitted signal on air at any time.
2. Multi-operator Unlimited stations
   a. Are only allowed two transmitted signals on any band, one per Phone and one per CW as per rule 5.1 and 5.2.
   b. Simultaneous transmissions on different bands are permitted.
3. Multi-operator stations are mixed mode only.

8. Teams

Team scenario 1

A station and two of their friends operate in the contest from their respective home QTH and participate in the contest and submit their logs in the normal manner. They are eligible for any awards in the category they entered as single operators. The contest manager was notified that these three stations want to form a team.

Their scores are tallied together and that is the team score.

Team scenario 2

A multi-single club has 2 operators who wish to work from their home QTH. The two single operators and the multi-single club contest and submit logs in the normal manner. They are eligible for any awards in the category they entered. The contest manager was notified that these 3 stations want to form a team. The two single operators and the club multi-single stations scores are tallied together and that is the team score.

1. A team can consist of only one of the following two options.
   a. Three single operator stations
   b. Two single operator stations and one multi-single station
2. A team can consist of stations located anywhere in VK, ZL, or P2.
3. An operator can only be included in one team.
4. Clubs may enter multiple teams of three call-signs.
5. The 'Team Leader' MUST nominate his team to the Contest Manager before the start of the contest.
   Email to *vk4sn@wia.org.au* with the subject "RD Team Submission".
   a. Nominations must include the Callsigns and Operator's Name. Where multiple teams from one club are submitted, it is suggested to use Team Names, example: Tazzie Devils
   b. The Team leader must supply postal details for receipt of any awards.
   c. Once the contest has started, team members cannot be changed.
6. The winner of the team initiative will be the highest combined score from any one team.
7. Team scores are not included in the determination of the winning state.

9. Contacts

1. Suggested Call: "CQ RD", "CQ Contest", or "CQ Test"
2. Exchange: A valid exchange consists of RS(T) followed by a three figure number as follows:
   a. For a single operator, the number of years you have been a licenced Ham. For example, if this is your 1st year as a ham then you will sign RS(T) 001. Round off to the nearest whole number. All zeros are not accepted.
   b. For a multi-op or club station, the number of years of the longest licenced Amateur.
3. On all bands, stations may be contacted at intervals of not less than THREE hours since the previous contact on that band and mode.
   a. FM & SSB count as one mode, as does CW & RTTY count for the CW mode. Therefore one cannot QSO with a station in FM and work them on SSB on the same band before the three hours is up.
4. No cross band contacts are allowed.
5. Exchange of contact information via satellites, telephones, repeaters, EchoLink, IRLP, or the internet is not in the spirit of the contest and is banned.
6. Contacts via satellites are not allowed for scoring purposes.
7. Contacts within the same call area are permitted.

10. Scoring

1. On 160 metres two points per completed valid contact.
2. On 23 cm or higher bands two points per completed valid contact.
3. On all other bands one point (no WARC bands allowed).
4. On CW and RTTY, irrespective of band, double points.
5. All scores obtained by the transmitting station between 0100 and 0600 LOCAL time, are tripled.

11. General Rules

1. WIA General Rules for All Contests apply unless otherwise specified.
2. All operators of single operator stations must perform all operating and logging without assistance.
   a. Use of public clusters only, is allowed on 50 MHz and above.
   b. Use of skimmer like technology with a bandwidth greater than 3 kHz is not allowed.
3. Holders of more than one licence or callsign MUST use only ONE callsign for the contest duration.
4. Automated operation is not permitted.
5. Computers can be used for logging and CW or RTTY reception and/or keying.
6. All operations must be in accordance with the band plan for the band in use, as published in the current edition of the WIA Callbook.
7. Any station observed as departing from the generally accepted codes of operating ethics or licence conditions may be disqualified.

12. WW2 ex Military equipment

1. Operators using Ex WW2 equipment will be awarded with a special certificate acknowledging their participation and use of such.
2. A declaration with the heading of WW2 Equipment will operate said units within the "ORIGINAL manufactures specified operating conditions", e.g. no mods to boost the output power etc. A copy of the preferred Certificate is available on the on the WIA website at *http://www.wia.org.au/members/contests/rdcontest/documents/WWII%20Declaration%202012.pdf*
3. Please include the declaration with your log submission.

13. Log Submission

1. Electronic Logging
   a. Use of logging software is preferred as the output file will be in Cabrillo format which suits our log checking software. See below for logger links.
   b. Logging software will automatically print a summary in the Cabrillo header.
   c. Email Logs to *rdlogs@wia.org.au* with your callsign in the subject.
   d. On receipt of your log, the robot will send an acknowledgement email to you. Just to be sure, it is advised that you flag your email for "confirmation of receipt", in which case you will receive two emails acknowledging receipt of the log.
2. Paper Logs
   a. Hand written logs are not preferred, however if sent must be legible and contain no more than 100 contacts.
   b. Entrants are encouraged to enter the paper logs into a logger after the contest and email the Cabrillo log as indicated above.
   c. Paper logs should be accompanied by a Summary Sheet showing all the details as per the log example below and nominated team name if used.
   d. Declaration: I hereby certify that I have operated in accordance with the rules and spirit of the contest; signed & dated. Please supply a contact telephone number and email address.
   e. Send paper logs and summary sheets to:
      RD Contest Manager
      43 Jahn Drive,
      Glenore Grove, QLD 4342.
3. If you genuinely have problems with the above, then acceptance of .xls, .csv, .mdb, or similar files will be considered for processing. A PDF or .doc(x) word file will be considered a paper log.
4. Emailed Logs are to be received by the contest manager no later than 30 days after the contest ends.
5. Paper logs are to be postmarked no later than 30 days after the contest.
6. All logs will be receipted by email or phone if no email exists for the operator.
7. Logs received after the closing date will not be eligible for processing.
8. Paper logs will not be returned unless a SASE is forwarded requesting return of the log.
9. VK entrants temporarily operating outside their allocated call area, including those outside continental Australia as defined for DXCC, can elect to have their points credited to their home State by making a statement to that effect on their summary sheet or in the 'soapbox' field in the Cabrillo file.

14. Contest Results

1. Determination of Winning State or Territory.
   State score = (Total points from logs submitted) divided by (number of licensees in the state or Territory), excluding beacons and repeaters as published in the WIA Callbook for that year.
2. Unless otherwise elected by the entrant concerned, the scores of VK0 stations will be credited to VK7, and the scores of VK9 to the mainland call area which is geographically closest. Scores of P2, or ZL will not be included in these calculations, although entrants in those areas are eligible for all certificate awards.
3. Results will be published 90 days after the close of the contest on the W.I.A. website and winners announced in AR magazine as soon as practical.

15. Contest Awards

1. Entrants must make at least 25 contacts to be eligible for awards.
2. Overall 1st, 2nd and 3rd place certificates will be posted to recipients.
   a. Single Operator Phone
   b. Single Operator CW
   c. Single Operator Mixed
   d. Single Operator QRP Phone
   e. Single Operator QRP CW
   f. Single Operator QRP Mixed
   g. Multi-operator – Single Transmitter
   h. Multi-operator – Multi Transmitter
   i. Team
   j. The top three foundation scorers regardless of category.
3. Certificates will be awarded to 1st, 2nd, and 3rd placegetters for each VK call area, and ZL & P2.
   a. Categories "a" through "i" as above.
4. Participants using WW2 ex-military equipment will receive a special acknowledgement certificate as well as any certificates gained in winning any section.

16. Example Log

1. Paper logs should be written to resemble the format for Cabrillo, as indicated below.
2. Every effort to retype paper logs into logging programs, or Excel is encouraged.

CALLSIGN: VK4SN

CLUB: Lockyer Valley Amateur Radio Club Inc

CONTEST: Remembrance Day
CATEGORY: SINGLE-OP ALL
MIXED CLAIMED-SCORE: 10
OPERATORS: VK4SN
ADDRESS: NR
STREET ADDRESS:
SUBURB

ADDRESS: STATE, POST CODE

17. Logging Software

1. Downloads
   a. VK Contest Log (VKCL) by Mike Subocz VK3AVV *http://www.mnds.com.au/vkcl/*
   b. John Drew VK5DJ RD logging program *http://vk5dj.mountgambier.org/Amateur_radio.html*
   c. WinRD+ logging program by James McBride VK6FJA *http://www.rjmb.net/rd/index.htm*
   d. SD logging program by Paul EI5DI *http://www.ei5di.com/*
2. Remember to check for updates immediately prior to contests to make sure you have the latest software that will contain up to date scoring and rule changes.

Freq (kHz)	Mode	Date	Time (UTC)	Call	RST Sent	NR	RST Rcvd	NR	Pts
7087	PH	2012-8-11	0200	VK1ABC	59	038	59	002	1
7087	PH	2012-8-11	0201	VK1DEF	59	038	59	012	1
7005	CW	2012-8-11	0205	VK4ABC	599	038	599	020	2
1825	CW	2012-8-11	0210	VK2ABC	599	038	599	003	4
1855	PH	2012-8-11	0215	VK3ABC	59	038	59	040	2

END-OF-LOG

VK2 news

Tim Mills VK2ZTM
e *tim.ztm@wia.or.au*

Quite a bit of club activity this month. The Orange & District ARC have their AGM planned for Friday, 3 August. For the past few months the club has been in caretaker mode. The Oxley Region ARC will have their AGM on Saturday the 4th. The Mid South Coast ARC has their quarterly meeting at Milton on Saturday the 11th. On Sunday the 12th, Summerland ARC has the annual SARCFEST at the Richmond Hill club rooms. The weekend 11/12 is also the RD Contest with the new starting time. VK2WI will be transmitting the opening address.

The following weekend is the Lighthouse and Lightship operation which includes HADARC at the Maritime Museum in Darling Harbour. Waverley ARS will go to Macquarie Lighthouse at South Head. Manly Warringah RS to the Barranjoey Lighthouse at Palm Beach. Central Coast ARC will team with Hellenic ARA to again activate Newcastle's Nobby's Head Lighthouse. Oxley Region ARC will go to the Tacking Point Lighthouse in Port Macquarie and Summerland ARC to some of the far north coast lighthouses. Who else has a lighthouse? Advise VK2WI News at *news@arnsw.org.au* so that your group gets some publicity.

At month's end the Blue Mountains ARC have WINTERFEST at their new club rooms, 4 Moore Street, Glenbrook, on Sunday the 26th. WICEN has the week long Shahzada horse enduro 27th to 31st August.

The St. George ARS VK2RLE 6800 Heathcote repeater has moved from its home of many decades. It is now at a lesser location within the same region. The move was necessitated by on-going difficult access and requirements at the host site.

In September Waverley ARS has a Foundation weekend on the 8th and 9th. Westlakes ARC have their annual field day on Sunday the 16th at the Teralba club rooms. Westlakes have the monthly meeting on the first Saturday afternoon. They are also open every Saturday from noon. Tamworth Radio Club meet on the first Friday evening at the rear of the Tamworth Hospital. Manly Warringah RS had their AGM last month. They again have available a Youth Grant for a young person to undertake getting an amateur licence. Check them out at *www.mwrs.org.au*

The Oxley Region ARC conducted another successful annual field day across two days of the June long weekend. 84 registrations were logged including Peter VK8ZPB who was returning home after attending the WIA AGM in Mildura. This was the second year that the Tacking Point Life Saving Club Hall had been used and it was enjoyed by all attending. This venue had been used for some past field days and then they had been held at the Sea Scouts hall near the CBD where parking and crowds had become difficult. At least this year the rain held off until the event was over. The ORARC in late June commissioned their second APRS site located to the north of Port Macquarie with VK2RCN-1. This system fills the gaps not being covered by VK2RPM-1 located to the south. The region now has full APRS coverage.

Earlier in the year Amateur Radio NSW put out a request for back copies of Silicon Chip for the library. Two almost complete sets were donated. From one set the only issue missing is November 1989. If anyone happens to have this issue, and it is no longer required, we would be most grateful to have same. Please advise by an email to *office@arnsw.org.au* Callbacks are again being taken on the VK2WI news bulletins on 20 metres, conditions permitting. The frequency is 14.170 MHz. This is in addition to those taken on all other frequencies in use. The photos in the June issue of Jeff VK4XJJ were provided by Erik VK2EJH. The next Foundation course and assessment days at VK2WI will be next month on Sunday the 23rd and 30th respectively. The Trash and Treasure for September will also be on the 30th. The mobile number to reach ARNSW has been terminated for the moment. Telephone contact is via the office number 02 9651 1490 which goes to a message bank.

73. Tim VK2ZTM.

VK4news Bundaberg Amateur Radio Club (BARC)

Gail Lidden-Sandford VK4ION - Secretary, BARC
e *secretary@barc.asn.au*

BARC puts WICEN on display - Proving HF communications between isolated Queensland districts

On June 7 exercise 'Contact 2012', organised by the Disaster Management Groups within Bundaberg and North Burnett Regional Councils was held to test WICEN's capability to establish radio contact between regional centres in the event of a breakdown in phone and internet communications during a disaster.

The exercise scenario was that a Category 4 cyclone had destroyed normal telecommunications between the regional centres so Bundaberg WICEN members set up both HF and VHF stations at Bundaberg and Gayndah, a distance of 120 km and normally within the 'skip zone' which inhibits communications between these regions.

The away team at Gayndah, Gail VK4ION, Kevin VK4FKEV, Linda Sullivan and Mark Sandford and the Bundaberg home team of Ross VK4JRO, Margaret VK4FHAM and Rusty VK4JM deployed ENVIS HF dipoles and set up their stations.

The exercise was coordinated by Queensland Police and was evaluated by Emergency Management Queensland observers who reported against the following criteria:

a. Ability of WICEN to identify suitable locations and establish portable radio transmission stations within close proximity to regional council offices at both Bundaberg and Gayndah.
b. The effectiveness of WICEN to establish two portable radio transmitting stations in a timely manner.
c. Effectiveness of messages to be communicated between Bundaberg and Gayndah utilizing WICEN resources.

Contact was established within seventy five minutes, which included erecting

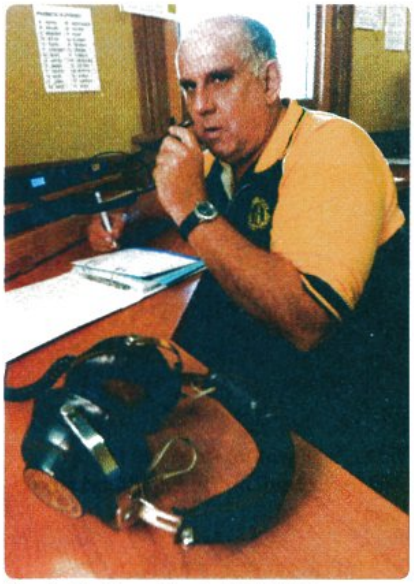


Photo 1: Ross Orpin VK4JRO operating during the exercise, as displayed in the Bundaberg NewsMail. Photo courtesy of Mike Knott, Bundaberg NewsMail.

antennas and setting up the stations. Message handling commenced using standard WICEN message forms and procedure. The messages were not previously seen by the operators and were deliberately long and involved with sitreps, obscure items and requests which provided a real-world environment for the scenario.

At the conclusion of the exercise WICEN members were confident while the evaluators, together with observers from Councils, EMQ, Police, Rural Fire, Ambulance and SES gave their assessment and all were wholeheartedly impressed with the demonstration.

In his report to Bundaberg Regional Council Local Disaster Management Group on 12 June Senior Sergeant Grantley Marcus said *'Conducted WICEN exercise on 7 June to test communications with North Burnett Regional Council and BRC. The system worked very well, however the main learning is to condense messages. WICEN will be incorporated into DDMG communications plan as a backup in the event Telstra cannot restore communications'.*

The exercise proved that effective communications were possible between geographically isolated councils and we hope provided inspiration for remote councils to pursue similar communications models. Their support personnel are tasked with drawing the communities together after a disaster and restoring communications is seen as a vital step.

The day also provided real time testing of the new WICEN portable stations which Bundaberg have built. The ENVIS dipole antennas worked brilliantly into the zone required and the whole exercise provided excellent publicity for the hobby of amateur radio.

There was a story on Channel 7 local news which included interviews with club members, disaster managers and the SES controller and this was followed by a print article with photo in the Bundaberg News-Mail.

The next big thing for members is a field day in October where teams will deploy to the far corners of the district to establish a five-station WICEN HF net.

Hervey Bay Club will field one of the stations in the exercise as six of their members attend the Bundaberg bi-monthly training and they are hoping to build a similar group to be of service within their Fraser Coast region.

Photo 2: WICEN portable station. BARC has three such stations ready to be deployed wherever and whenever required.

VK3news

Tony Collis VK3JGC

Geelong Amateur Radio Club - The GARC

Sir Douglas Mawson Antarctic Exhibition (1911 – 1914)

The GARC manned the Radio Room part of a centenary exhibition of Douglas Mawson's expedition to Commonwealth Bay, held at Osborne House in Geelong, where vintage radio equipment such as the R1155 and teleprinters, donated by the club, were on display. Below are some of the 60 children from the Roslyn Primary School who came to view the exploits of the Mawson Expeditions to Antarctica. Whilst amateur radio was not a primary topic, the two exhibits that attracted the most interest in the Radio Room were the Morse key with a tone generator that they used to spell out their names and a vintage teleprinter both of which were deemed to be 'cool'. The three component crystal set, with headphones, aroused considerable interest when identified to them as an actual radio.

2012 Solstice Dinner

This year the Annual Solstice Dinner was held at the Belmont club rooms of the Geelong Radio and Electronics Society (GRES) and was well attended by members from both the GRES and the GARC.

Photo 1: Students from the Roslyn Primary School in the Exhibition Radio Room.

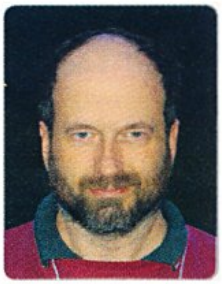
The guest speaker, Ivan Hawthorn, was in 1975 and again in 1978-79 the Officer in Charge of the 28th and 32nd Australian National Antarctic Research Expeditions wintering on Macquarie Island in the sub-Antarctic for 24 months.

Photo 2: Guest speaker Ivan G Hawthorn BEM JP.

Ivan recounted that in 1912 Douglas Mawson was having problems struggling back to his base at Commonwealth Bay after the deaths of his two companions, Ninnis and Mertz. He missed the ship that could have taken him home, by just a few hours, and had to winter again at Cape Denison. But at least he had the consolation of radio contact with Australia. Sending Morse code signals via a radio mast and repeater station built on Macquarie Island, Mawson's party could send out weather reports and receive and transmit messages when atmospheric conditions allowed.

These were the first radio transmissions ever made from Antarctica to the outside world. It was not till the late 1980s that the Morse key was abandoned as the primary communication system.

The presentation was followed by a film showing graphically the extent of the conditions that these expeditions still have to endure.



AMSAT

David Giles VK5DG
e *vk5dg@amsat.org*

KiwiSAT ready for launch

It was announced in June that KiwiSAT's hardware is flight ready and the launch campaign has been started to get it in orbit by mid-2013. KiwiSAT is a satellite project by AMSAT-ZL with strong ties to Massey University in Auckland. Similarities with AO-51 will no doubt be made as they are of similar size and have multiple transponders.

History

The project's genesis came as an idea during the NZART conference in 1999. Two of KiwiSAT's team are Ian Ashley ZL1AOX and Fred Kennedy ZL1BYP. Ian has been a command station for several amateur satellites including all of the P3 series (P3A, AO-10, AO-13 and AO-40) as well as involved in other satellite projects (UO-11, NO-44 and PCSAT-2). Fred has been involved in amateur satellites since 1986 and used his engineering abilities to fabricate parts for AO-40. Due to this Fred became the KiwiSAT team leader.

In 2001 a feasibility study determined that a microsat size satellite could be developed by New Zealand amateurs. Microsats were popular during the 1990s and cubesats were only just being developed at the time (the first standard cubesats were launched in 2003). By 2002 a basic mockup structure was completed and the transponder types determined. During 2005 prototypes for the linear transponder and integrated housekeeping unit (IHU) were being tested. The software for the IHU would prove to be a major issue because using the same operating system as previous satellites (such as AO-16) would not be allowed due to ITAR regulations. The FM transponder prototype was also completed. Fred and Ian gave a comprehensive presentation to the 2006 AMSAT-NA symposium describing KiwiSAT and progress made so far. They showed the engineering mock-up, final design model and the current versions of transmitter, receiver and sensor hardware.

In 2008 suitable solar panels were purchased (off eBay). They had organised solar panels from the USA but could not purchase them due to ITAR regulations in 2005. The 70 cm beacon was a late addition and a prototype was constructed in 2009 which replaced another experiment that measured ozone. During 2009 the entire satellite prototype was assembled as a 'flatsat' where all components were connected and laid out flat on a bench. The U/V linear transponder was connected to outdoor antennas for on-air testing. An updated presentation was delivered by Bill Ress N6GHZ at the 2009 AMSAT-NA symposium. Now in 2012 all the hardware has been finished to flight ready standard. From now until launch KiwiSAT will still undergo testing and software development.

Design

Using a similar mechanical design that has been used since AO-16, KiwiSAT is based around five aluminium 'trays' mounted in an aluminium frame. Tray 1 holds the transmitters. Both are on two metres with a two watt PEP linear and one watt FM. Each has its own beacon input with the linear transmitter sending CW telemetry and the FM transmitter for voice, 9k6 and 1k2 data downlinks. Tray 1 also has a sun sensor and the 70 cm experiment beacon. Tray 2 holds the battery charger regulator. Tray 3 holds the ten 4.5 Ah NiMH batteries as well as the drivers for the magnetorqing coils. Tray 4 holds the IHU and data modems. Based on an 80C188 CPU with a large RAM disk it has the computing power similar to an old IBM XT. IHU designs of this type have been used since the early 1990s and have proven their reliability. It was meant to use the same operating system as previous satellites but this was also stopped due to ITAR regulations. Since then all software has had to be developed by the team. Tray 5 houses the three 70 cm receivers – one for the linear transponder, one for the FM transponder and one for the command uplink. Above the trays is the 'Attic'. This holds the antennas, sensors, 23 cm downconverter, and GPS module.

KiwiSAT has a horizon sensor (or Earth sensor), magnetometer, two sun sensors, a small colour camera and a GPS receiver. From all this information it will determine its position and which way it is facing. To adjust its orientation and rotation it will use magnetorquing coils to react with Earth's magnetic field. The camera is similar to the one flown on the University of Tokyo cubesat XI-IV (CO-57). There is also a 100 mW 70 cm beacon for use in an experiment to measure Faraday rotation and ionospheric propagation. This beacon will transmit 9k6 baud data in phase with the two metre FM transmitter. A suitably equipped ground station will receive and decode both signals simultaneously as part of the experiment. To minimise interaction

the antenna is on the opposite face to the antenna used by the 70 cm receivers. Many years ago UoSat Oscar 9 had a glitch that commanded its 70 cm and two metre transmitters on together. This desensed the 70 cm command receiver so much that huge efforts had to be made using EME stations to get it to switch its transmitters off. Antenna placement and filtering will minimise the risk of this happening again.

Operation

The proposed frequencies are available on the KiwiSAT website but in summary it will have a linear transponder with a 70 cm or 23 cm receiver feeding a two metre transmitter. The transponder has a bandwidth of 30 kHz and an output power of two watts PEP. This will have a CW telemetry beacon. A second transponder with a 70 cm or 23 cm receiver feeding a one watt two metre transmitter can be used for FM voice or data at 9k6 or 1k2 baud. This also transmits telemetry data. A separate 70 cm beacon can operate in conjunction with these data transmissions for the Faraday rotation experiment. The 70 cm antennas are quarter wave whips, the 23 cm antenna is made up of four dipoles and the two metre antenna is made up of four 'measuring tape' quarter wave whips.

Where to from here

KiwiSAT is planned to be launched from a Russian DNEPR rocket into an 800 km low Earth orbit. Negotiations are already happening with ISC Kosmostras and the requirements for the rocket interface have been met. The DNEPR rockets are decommissioned SS-18 intercontinental ballistic missiles that are now used for launching satellites instead of nuclear warheads. Among the OSCAR series successfully launched by DNEPR rockets are UO-36, SO-41, SO-42, AO-49, SO-50, AO-51, CO-55, CO-57, and RS-22.

Final pass

While Fox-1 is seen by many to be the successor of AO-51, KiwiSAT may prove to be a more popular choice with its multiple transponders and modes. The launch will be the most expensive part of the project and they are looking for sponsorship.

References

Ashley I. And Kennedy F., *'KiwiSAT: A communications satellite for New Zealand'*, Proceedings of the AMSAT-NA 2006 space symposium

Kennedy F. and Ress B., *'KiwiSAT: A communications satellite for New Zealand'*, Proceedings of the AMSAT-NA 2009 space symposium

http://www.kiwisat.org/index.html

http://www.kosmotras.ru/en/

AMSAT-VK

AMSAT Co-ordinator
Paul Paradigm VK2TXT
email coordinator@amsat-vk.org

Group Moderator
Judy Williams VK2TJU
email secretary@amsat-vk.org

Website
www.amsat-vk.org

Group site:
group.amsat-vk.org

About AMSAT-VK

AMSAT-VK is a group of Australian amateur radio operators who share a common interest in building, launching and communicating with each other through non-commercial Amateur Radio satellites. Many of our members also have an interest in other space based communications, including listening to and communicating with the International Space Station, Earth-Moon-Earth (EME), monitoring weather (WX) satellites and other spacecraft.
AMSAT-VK is the primary point of contact for those interested in becoming involved in amateur radio satellite operations. If you are interested in learning more about satellite operations or just wish to become a member of AMSAT-Australia, please see our website.

AMSAT-VK monthly net Australian National Satellite net

The net takes place on the second Tuesday of each month at 8.30 pm eastern time, that is 0930 Z or 1030 Z depending on daylight saving. The AMSAT-VK net has been running for many years with the aim of allowing amateur radio operators who are operating or have an interest in working in the satellite mode, to make contact with others in order to share their experiences and to catch up on pertinent news. The format also facilitates other aspects like making 'skeds' and for a general 'off-bird' chat. In addition to the EchoLink conference, the net will also be available via RF on the following repeaters and links.

In New South Wales
VK2RMP Maddens Plains repeater:146.850 MHz
VK2RIS Saddleback repeater: 146.975 MHz
VK2RBT Mt Boyne Repeater on 146.675 MHz

In Queensland
VK4RIL Laidley repeater on 147.700 MHz
VK4RRC Redcliffe 146.925 MHz IRLP node 6404, EchoLink node 44666

In South Australia
VK5TRM, Loxton on 147.125 MHz
VK5RSC, Mt Terrible on 439.825 MHz IRLP node 6278, Echolink node 399996

In Tasmania
VK7RTV Gawler 6 m. Repeater 53.775 MHz IRLP node 6124
VK7RTV Gawler 2 m. Repeater 146.775 MHz. IRLP node 6616

In the Northern Territory
VK8MA Katherine 146.700 MHz FM

Operators may join the net via the above repeaters or by connecting to EchoLink on either the AMSAT-NA or VK3JED conferences. The net is also available via IRLP reflector number 9558. We are keen to have the net carried by other EchoLink or IRLP enabled repeaters and links in order to improve coverage. If you are interested in carrying our net on your system, please contact Paul via email. Frequencies and nodes can change without much notice. Details are put on the AMSAT-VK group site.

Become involved

Amateur satellite operating is one of the most interesting and rewarding modes in our hobby. The birds are relatively easy to access and require very little hardware investment to get started. You can gain access to the FM 'repeaters in the sky' with just a dual band handheld operating on 2 m and 70 cm. These easy-to-use and popular FM satellites will give hams national communications and handheld access into New Zealand at various times through the day and night.
Should you wish to join AMSAT-VK, details are available on the web site or sign-up at our group site as above. Membership is free and you will be made very welcome.

ALARA

Margaret Blight VK3FMAB – Publicity Officer

Tina VK5TMC, President at the time of the YL International Meet, Marilyn VK3DMS, Maria VK5BMT, Jean VK3VIP, our current President, Jenny VK5ANW/ VK3WQ, Christine VK5CTY and Norma VK2YL, front row centre.

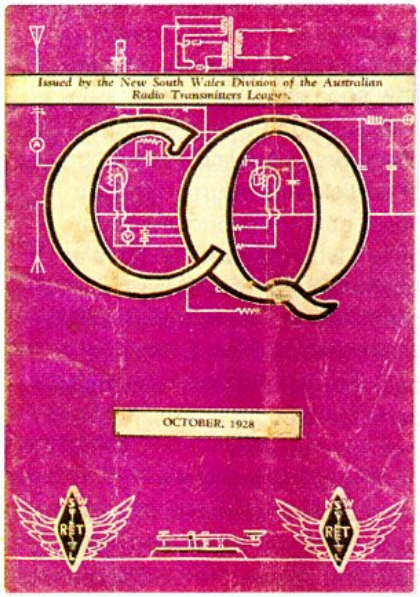
As the year steadily progresses it may be time to look back and reflect on some of the important events that have occurred so far. They may be at a club level, state and/or national level and even, especially this year, at an international level.

We had the opportunity of meeting with our international peers at the ALARA International Meet earlier this year at Glenelg, a beautiful seaside suburb of Adelaide. There was an opportunity to learn about what may be occurring for 'women in radio' overseas by taking out a sponsorship of someone living in another country and who is a member of an equivalent organization to ALARA. Several new sponsorships did occur as a result of meeting interested operators in Adelaide and a number of participants returned to their home country to enquire about others who may wish to have an Australian sponsor. This creates a great opportunity to communicate with someone from a different background and learn how they participate in our mutual hobby in their own country.

The gathering at the International Meet also provided an opportunity for ALARA Presidents, past and present, to participate and we had the unique opportunity to take a photo of them all together, as the accompanying photo shows. The original ALARA president Norma VK2YL, previously VK3AYL, seated centre front, was our first President. It was through her efforts to link up the YL radio operators so they had an opportunity to meet and communicate with each other that ALARA came into being in 1975.

Hamads

WANTED - NATIONAL



Copies of *Australian CQ* magazine.

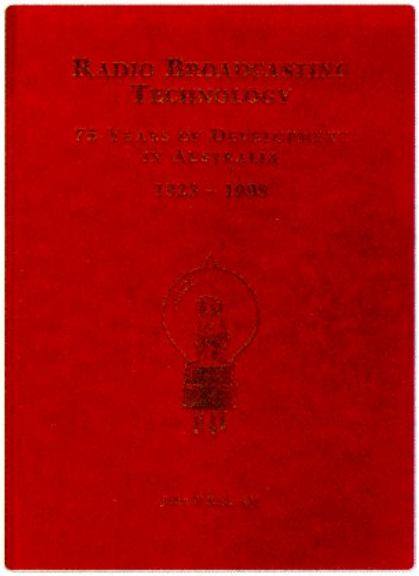
The WIA Archive is seeking early copies of the late 1920s Australian CQ for copying and/or adding to the WIA Archive's shelves.

This magazine was published by the NSW Division of The Australian Radio Transmitters League, a group which was initially formed in 1927 in Queensland and grew quite large in NSW. Later it established itself to some extent in most Australian States. The magazine possibly ceased publication in late 1929 when ARTL members in NSW re-united with the WIA. The WIA Archive holds only one complete copy and one part copy of this magazine. In addition, a small number of copies are held by ARNSW and the Kurrajong Radio Museum. Collectively, we wish to build up the issues extant.

The format was fourteen printed pages stapled; each page approximately 150 mm wide x 220 mm height. A coloured cover was included although the colour seems to have changed with each year of publication.

Please contact Peter VK3RV via email *vk3rv@wia.org.au* or c/o the National Office in Bayswater if you can help us locate this important part of our history.

WANTED - NATIONAL



The WIA Archive is seeking a copy of ***Radio Broadcasting Technology*** by John F. Ross.

This book covers 75 years of Radio Broadcasting History in Australia between 1923 and 1998. It primarily covers Commercial and ABC broadcasting, but also contains some information about activities of early amateur broadcasters.

This is a hard covered, substantial book, approximately A4 page size and has 600 pages. It was privately published and so had very limited circulation. The WIA Archive would like to obtain a copy to complement other books held by the institute covering early Australian broadcasting and communications.

Please contact Peter VK3RV via email *vk3rv@wia.org.au* or c/o the National Office in Bayswater if you can help us locate a copy of this important book.

WANTED - SA

Installation instructions for a Scalar SC33DX 10/15/20 metre three element beam antenna.

Contact Steve VK5SFA QTHR, phone 0418 657 658 or *steve_adler@netspace.net.au*

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Write to **RAOTC**
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Ron Cook 03 9579 5600

or Bill VK3BR on 03 9584 9512, email *raotc@raotc.org.au* for an application form.

WANTED - ACT

Loop aerial type 3 or 4 as used in Lancaster aircraft installations for use with the direction finding circuit of Receiver type R1155.

QTHR VK1CPK (02) 6231 1790

Contributions to Amateur Radio

AR is a forum for WIA members' amateur radio experiments, experiences, opinions and news.

Your contribution and feedback is welcomed.

Guidelines for contributors can be found in the *AR* section of the WIA website, at *http://www.wia.org.au/members/armag/contributing/*

Email the Editor:
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56 ITU Radio Regulations

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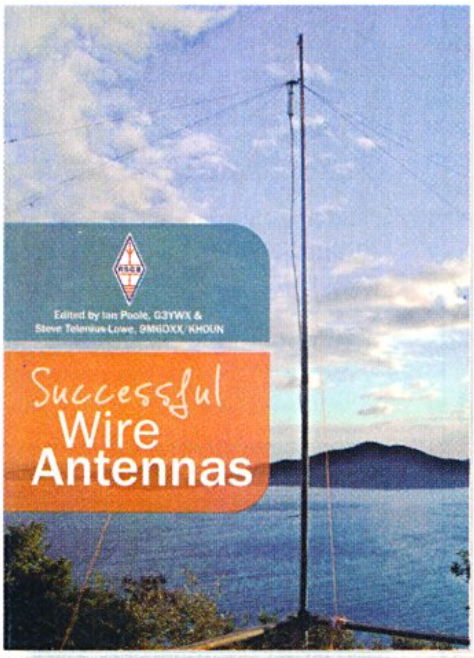

Successful Wire Antennas

Edited by Ian Poole, G3YWX and Steve Telenius-Lowe, 9M6DXX/ KH0UN

Successful Wire Antennas is part of the widely popular family of Practical Wire Antenna books published by Radio Society of Great Britain (RSGB). Packed with the very latest wire antenna designs and developments from around the world, this book is a must-have for wire enthusiasts of all levels, from expert to beginner. It's full of clear diagrams, easy-to-read text, and free from any difficult mathematics.

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Softcover: 240 pages Publisher: Radio Society of Great Britain (RSGB); (2011)

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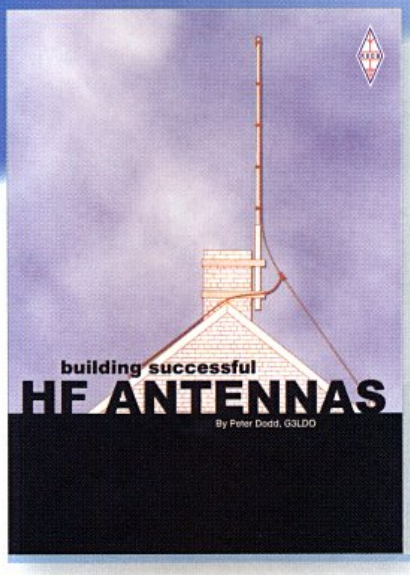

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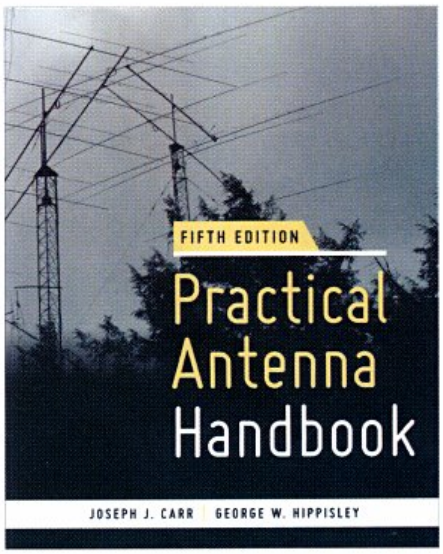

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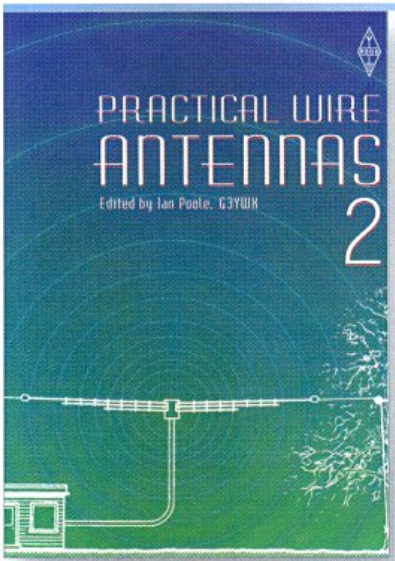

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